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CHILDREN'S READING COMPREHENSION OF
CONNECTIVES AND PERSONAL PRONOUNS IN
SOCIAL STUDIES

by



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A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled Children's Reading Comprehension of Connectives and Personal Pronouns in Social Studies, submitted by Nancy Elizabeth Davison in partial fulfilment of the requirements for the degree of Master of Education.

ABSTRACT

Earlier studies have shown that children experience problems in reading with understanding the language of books written for them by adults. One of the difficulties pupils encounter may be their insufficient understanding of connectives and personal pronouns. The purpose of the present study was to investigate pupils' reading comprehension of the connectives and personal pronouns in social studies material.

The population consisted of all children attending regular classes in the Edmonton Separate School System in grades four, five, and six. From two schools 301 children of two classes at each grade level in each school comprised the test population. From the test sample of 248 pupils two experimental and two control groups were formed. Two series of cloze tests were used: one series assessed pupils' reading comprehension of social studies material (Cloze Test, Series A); the second series tested their understanding of the connectives and personal pronouns contained in the identical passages (Cloze Test, Series B). Each series consisted of six reading passages randomly selected from two books at each of three grade levels, four, five, and six. The two books were randomly selected from sources listed as primary references in the Enterprise Activities Catalogue issued by the School-Book Branch, Department of Education, Province of Alberta.

Data on the variables of mental ability and general reading comprehension were obtained from standardized tests. Further data on chronological age, sex, and grade placement were obtained from the official school records.

Three hypotheses were formulated and tested by the statistical procedures of two-way analysis of variance, Pearson product-moment correlations, and stepwise linear regression analysis.

Comparisons of the total groups' performance on the two cloze series showed a significant shift in the pattern of difficulty from lower scores on Cloze Test, Series A to higher scores on Cloze Test, Series B on fourth-grade reading passages. The reverse was noted for sixth-grade passages. The increased difficulty was possibly a function of both the number and type of connectives and the forms of the personal pronouns tested. The total scores of both groups on grade five passages for both cloze test series were higher than for passages on the fourth and sixth grade levels. In Cloze Test, Series B this occurred even though the grade five passages contained a greater number of connectives than did the grade four or grade six passages. Thus, the frequency of the occurrence of connectives alone does not account for the difference in performance. It was suggested that other factors, the particular connectives in the grade five passages, made these selections easier to comprehend.

Comprehension scores on both cloze test series were influenced significantly by mental ability. General reading comprehension, grade placement, and chronological age also contributed significantly to pupils' scores. Of the five predictor variables, only sex provided no significant contribution to pupils' reading comprehension.

The informal analysis of pupils' error responses revealed that pupils found those connectives which occurred least frequently in the reading passages more difficult to understand. An excessive use of "and" to indicate a variety of coordinate and subordinate relationships

showed that pupils' comprehension of such connectors was imprecise. The possessive form of the personal pronouns was more difficult to comprehend than their nominative and objective forms. The pupils frequently ignored punctuation as a cue to meaning.

The findings of the study suggested that the comprehension problems encountered in reading social studies material may be compounded by the difficulties in understanding the connectives and personal pronouns contained in such material. There is a need for specific instruction to develop pupils' reading comprehension of these important function words in social studies material.

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CHAPTER I

INTRODUCTION

Reading is thinking triggered by printed symbols (Jenkinson, 1967). In reading social studies material one of the understandings is that of perceiving the relationships between ideas linked together by sequences of printed symbols called connectives and personal pronouns. To grasp the significance of the information pupils must follow the time or place sequence, make comparisons, or discern causes and effects. Frequently such relationships are indicated by the use of connectives and personal pronouns. However, very little is known about the difficulties these language elements present in reading social studies.

Language is a vehicle of communication. The development of language in children begins with oral language and is greatly influenced by the child's early environment. Children are imitators and, in the initial stage, pattern their language according to models presented to them by adults and others. By the time they begin school children are able to use "the fundamental structures of the English language and the major sound patterns of the English sentence" (Smith, 1963: 13). However, it is the reading of this language which most significantly determines academic success.

Because oral language is the primary form and the basis of written language many characteristics of written English parallel those of oral language. Communication through the two forms depends on two media; oral language is expressed through sound symbols whereas written language expression is transmitted by an association of sounds

with letter symbols. Thus, each is unique. Reading requires students to use their knowledge of both oral and written language in the auditory-visual association of sounds with letter symbols to identify words and other language structures on the printed page (Robertson, 1966: 1).

Accurate communication demands that both the sender and the receiver share a store of common symbols or, as Jakobson says, "prefabricated representations" (1956). This includes not only words but also language patterns used to convey meaning from speaker to listener or from writer to reader. Such a requirement is necessary both for oral and for written communication. When writing, an author chooses a style of exposition which he deems will most accurately carry his message. The quality of the thinking aroused by reading his words depends not only upon the author's clarity of thinking but also upon the ability, experience, and competency of the reader to interpret the symbols the writer has chosen to use.

Both oral and written language display various levels of complexity depending on the purpose of or the circumstances surrounding the communication. Conversation tends to an informal level whereas speeches adhere to more complex language and are more formally structured. The fiction which children read during their leisure often presents simple, conversation-like language. On the other hand, the textbooks pupils read in school frequently contain formal language structures. "By tradition, a formal language has gradually developed for the printed word which consistently uses structures of language less frequently heard in speech" (Robertson, 1966: 2). Adults write for children and often make extensive use of formal structures. When

children meet the structures of formal language in print prepared for them by others, reading problems may arise.

I. STATEMENT OF THE PROBLEM

As pupils progress in school through grades four, five, and six they are required to do more reading in many subject fields. They are encouraged to pursue wide reading in their leisure to use and develop the reading skills they are taught in school. Reading with comprehension is crucial in social studies. Children are expected to acquire and retain facts and understandings peculiar to this subject. The variety and quantity of information to be gained from social studies requires that pupils do a great deal of independent reading in this subject area.

Important among the processes in the act of reading is the perception of the interrelationships among ideas. To grasp the meaning of social studies material they read, pupils in grades four, five, and six must cope with the language patterns used by authors to show such meaning connections. The manner in which authors use words and syntax can facilitate or impede children's comprehension of reading material, for, although a child may use words and syntax in a way which is meaningful for his communication, it does not necessarily follow that he understands them when written by another person.

Coordinate and subordinate language structures are frequently used to relate events in social studies literature. An understanding of the use of connectives and personal pronouns which function to show these relationships can aid reading comprehension of such material. Studying three basal reader series, Robertson investigated

the problems which the use of subordinate structures posed for children in grades four, five, and six. She stated that, "The association of ideas is partially through the connectives which introduce them. To understand the nature of the association of these ideas an understanding of the connectives is required" (Robertson, 1966:1). In addition, the ability to follow the sequence of happenings and characters, to make comparisons, and to discern causes and effects is facilitated by the accurate location of antecedents for which the personal pronouns stand.

Bormuth (1966) has shown that the presence of pronouns in conjunction with connectives can be a factor which compounds pupils' difficulties in recognizing relationships among ideas. In correlating separate linguistic elements with the difficulty index of a passage, he determined that part-of-speech variables exhibited very high correlations with difficulty. The ratio between the number of pronouns and conjunctions in a reading passage exhibited a correlation of .81 with difficulty.

Pupils in grades four, five, and six may have trouble understanding the connectives and personal pronouns contained in social studies reading material.

II. THE PURPOSE OF THE STUDY

Ideas are associated in many ways. This study will investigate one of these. Involving pupils in grades four, five, and six in two Edmonton Separate Schools (government schools attended by children of the Roman Catholic faith), the purpose of the present study is to investigate the understanding children have of the connectives and personal pronouns they read in social studies material. Both of these

elements are used to indicate the associations between the characters and events which an author develops in his writing. An understanding of such relational words can facilitate pupils' abilities to identify and distinguish main and supporting ideas, to follow sequences, to make comparisons, and to determine causes and effects.

At present, in the Edmonton Separate Schools, there is no prescribed provision, either in the basal reading or social studies programs for the systematic development of children's understanding of connectives and personal pronouns. The results of the present study may indicate a need for such instruction.

III. QUESTIONS POSED

The present investigation was developed to study possible answers to the following questions:

1. Is there a difference between pupils' reading comprehension of social studies material which did not test understanding of a specific language element and pupils' reading comprehension of social studies material which tested understanding of two specific language elements, connectives and personal pronouns, in this same material?

2. a) Is there a relationship between pupils' general reading comprehension and the same pupils' comprehension of social studies material?

- b) Is there a relationship between pupils' general reading comprehension and their reading comprehension of social studies material when the same pupils' understanding of two specific language elements connectives and personal pronouns, was tested?

3. a) Which of the factors of mental ability, general reading comprehension, chronological age, sex, and grade placement and/or which combination of these factors most significantly affects pupils' reading comprehension of social studies material which did not test understanding of a specific language element?

b) Which of the factors of mental ability, general reading comprehension, chronological age, sex, and grade placement and/or which combination of these factors most significantly affects pupils' reading comprehension of social studies material which tested understanding of two specific language elements, connectives and personal pronouns?

IV. HYPOTHESES

Three hypotheses were formulated on the basis of these questions. Stated in the null form they are:

1. There is no significant difference by grade between pupils' comprehension in reading social studies materials in Cloze Test, Series A (deletion of every n^{th} language element) and their comprehension in reading this same material as tested by Cloze Test, Series B (deletion of connectives and personal pronouns).

2. There is no significant correlation by grade between pupils' general reading comprehension scores on STEP Form 4A and their comprehension in reading social studies material in Cloze Test, Series A and in Cloze Test, Series B.

3. There is no significant relationship between pupils' scores on Cloze Test, Series A and the following factors; mental ability as measured by SCAT Form 5A, general reading comprehension as measured by STEP Form 4A, chronological age, sex, and grade placement or between

their scores on Cloze Test, Series B and the same factors.

V. DEFINITIONS OF TERMS

For the purpose of this study the following definitions will be used:

Function words. Function words are those words in a sentence which aid meaning by showing the relationships that exist between the words or clauses in the sentence whole. They are structure signals. The structure signals and remaining words together indicate the meaning of the sentence. e.g. John and Mary ate the ice cream.

Connective. A connective is a word or group of words that connects a word or clause to another word or clause on the printed page. The following are explanations of various types of connectives:

a) Words which relate a clause to a word or group of words within a sentence but which serve only to introduce the clause as a subordinate part of the sentence are called simple includers (Francis, 1958: 390). e.g. She knew that he would come.

b) Connectives are words which join clauses to words or groups of words which alone would constitute an independent clause (Gleason, 1965: 342). e.g. John tried but he failed.

c) Relative pronouns which have added structural functions within the clause are connectives (Gleason, 1965: 335). e.g. She sat on the chair which had just been painted.

d) Function words classed as coordinators such as "and," "but" which connect two nouns or verbs and correlatives such as "either... or," "both...and" are connectives. e.g. We like ice-cream and cake. This sentence expresses two ideas linked together by "and." (i) We

like ice-cream, and (ii) We like cake.

e) Words which delineate between-sentence connections, such as the conjunctive adverbs "therefore" and "moreover," are classed as connectives. The complete communication depends on the association of the thoughts between the two independent sentences. e.g. Jim and Bobby have the measles. Therefore, they cannot go to the circus.

No phrasal connectives such as "in order that" or "as if" will be used in this study because pupils' understanding is to be checked by use of a cloze procedure. In this procedure reading passages are mutilated by the deletion of every n^{th} word. Pupils are asked to supply for each blank space only one word which makes sense for them.

Personal pronoun. A personal pronoun is a word, a subclass of nouns, which indicates the person or persons speaking, person or persons spoken to, and person or things spoken about. This would include the words I, we, you, he, she, it, they, and their objective and possessive (first and second) forms (Francis, 1958: 244).

Antecedent. a) An antecedent is the "substantive for which a pronoun stands; that is, the word or group of words to which the pronoun refers" (Albaugh, 1964: 26). e.g. 1. Jim and Bobby have the measles. Therefore, they cannot go to the circus. The word "they" is substituted for and refers to the words "Jim" and "Bobby." e.g. 2. When he was in college, Lewis played football. The use of the pronoun "he" eliminates the necessity of repeating the name "Lewis" to which it refers. The sentence means, "When Lewis was in college, Lewis played football."

b) Antecedent is a term "sometimes used for a noun followed by a definite relative adjective that introduces a clause" (Albaugh, 1964: 27). e.g. A student whose grades are low needs to study.

Reading comprehension. Reading comprehension in this study is the understanding pupils have of the material they read as measured by their ability to correctly answer multiple-choice questions (as in STEP Form 4A) or to correctly fill in cloze items (as in Cloze Test, Series A and Cloze Test, Series B) according to the test directions.

General reading comprehension. In this study, general reading comprehension refers to the total score each student receives on STEP Form 4A.

Cloze procedure. Cloze procedure is "the set of rules by which cloze tests are made. Rules specify the definition of a word, manner of words selected for deletion, number of items in the test, length of the blanks, spacing of the type" (Bormuth, 1962: 3).

Word. In a cloze test "A word is defined by the white spaces with which the author has separated it from other words. A number is considered a word" (Bormuth, 1962: 2). A hyphenated word consisting of two free forms will be considered two separate words in this study. e.g. "fur-bearing."

Cloze item. "A cloze item is the blank of fifteen typewriter spaces substituted for a deleted word" (Bormuth, 1962: 2).

Cloze test. "A cloze test is a collection of cloze items" (Bormuth, 1962: 3).

Grade level of reading passage. Passages were selected at random from social studies books recommended for the use of pupils in

grades four, five, and six as reference materials. The term "grade level of reading passage" refers to the grade in which the Province of Alberta, Department of Education recommends that the book, from which the passage was taken, be used.

Cloze Test, Series A. Cloze tests designed for this study in which every fifth word beginning with the sixth word of the first sentence of each passage is deleted.

Cloze Test, Series B. Cloze tests designed for this study in which only connectives and personal pronouns are deleted.

Cloze response. A cloze response is what the student writes or fails to write in a cloze item. Only responses which match the original passage are counted as correct (Bormuth, 1962: 3). Reasonable substitutions for place names or first names of persons will be accepted.

e.g. Cloze Test, Series A. Cloze item #19, test #5. "After we had refrigerator ships, people from _____ and other cities in the United States went to Costa Rica and started banana plantations." "Boston" is the exact word deleted from the passage. The names of other American port cities such as "New York" and "Los Angeles" supplied by pupils will be scored correct.

e.g. Cloze Test, Series A. Cloze item #12, test #11. "The first white man to reach the prairies was _____ Kelsey who agreed to explore for the Hudson's Bay Company." "Henry" is the correct first name. These tests are not designed to measure the pupils' factual knowledge of social studies and thus, responses such as "Thomas," "Sir," and "Lord" will be credited.

Cloze readability. Cloze readability of a passage is the number of correct responses on a cloze test over that passage (Bormuth, 1962: 3).

Pre-cloze test. "A pre-cloze test refers to a cloze test which is taken before reading the original unmutilated article" (Rankin, 1965: 33). Hereafter, in this study, the term cloze test refers to a pre-cloze test.

VI. LIMITATIONS OF THE STUDY

1. Only one-word connectives and only personal pronouns (subjective, objective, and possessive forms) are included in the study.
2. The study of pupils' understanding of connectives and personal pronouns is limited to their reading comprehension of them in social studies material as measured by a cloze procedure.
3. The cloze test passages are selected at random from books listed in the Enterprise Activities Catalogue as "primary references" which the Program of Studies recommends for the use of pupils in grades four, five, and six in Alberta Schools. The investigator cannot state, therefore, with absolute certainty that the passages used were unseen by all pupils before the administration of the tests. However, these books are not used as classroom texts in the social studies program. It is also assumed that the authors had used the connectives correctly in the test passages.
4. The testing in this investigation is limited to pupils of middle class socio-economic status as represented by pupils in grades four, five, and six in two schools so designated by officials of the Edmonton Separate School System.

5. Any generalization of findings will have to be limited to similar school populations.

6. Administration of all the tests was carried out by the individual teachers in the classrooms concerned. The investigator did attempt to control the teacher variable factor as much as possible by conducting a briefing session with the total pupil sample by school and grade and by separate meetings with the teachers of each school. However, it is impossible to ensure that conditions were identical for all pupils.

VII. SIGNIFICANCE OF THE STUDY

This study is an attempt to discover if pupils' reading comprehension of social studies material, representative of books listed in the Enterprise Activities Catalogue as "primary references" recommended for use in the schools of Alberta in grades four to six, is facilitated in a particular way by an understanding of connectives and personal pronouns contained therein.

It is hypothesized that such a knowledge is an aid to comprehension, particularly to the development of the ability to recognize relationships of coordination, subordination, sequence, comparison, and cause-effect between ideas set forth by the writer. Success in social studies is largely dependent on this ability (Huus, 1963).

If such a relationship is found to be significant, teachers in grades four, five, and six may be prompted to include in their teaching of reading, whether it be in a "reader" or in a subject text, specific

and developmental lessons to further pupils' understanding of these important function words.

If such a relationship is found to be significant it would be well to acquaint students in teacher education programs with this problem area and to introduce them to materials and procedures which could be effectively used to facilitate pupils' reading comprehension of social studies material.

Recently, reader series containing social studies selections have become available in the intermediate grades. The use of such materials in instructional programs with an emphasis on understanding the relationships between ideas expressed by connectives and personal pronouns could do much to improve pupils' reading comprehension.

CHAPTER II

BACKGROUND OF THE STUDY

Communication is the interchange of thoughts. In language communication, exchange of thoughts is effected by the use of word symbols. These symbols, arbitrary but conventionalized, are the raw materials with which language expression in listening, speaking, writing, and reading is forged. All forms of language expression have the same structural patterns but differences in use are evident depending on the formality or informality of the style used in relaying the communication.

As children progress in school emphasis is shifted from developing skills in listening and speaking in the primary grades to developing skills in writing and reading in the intermediate grades and beyond.

The focus of the present investigation is grade four, five, and six pupils' reading skill in understanding connectives and personal pronouns in social studies passages.

The chapter presents material selected to develop a background for this study on the following topics:

- I The Nature of Language
- II The Nature of Reading Comprehension
- III Language Development and Reading Comprehension
- IV Reading in Social Studies
- V The Function of Connectives and Personal Pronouns
- VI Children's Use of Connectives

VII Children's Use of Personal Pronouns

VIII Summary of the Chapter

I. THE NATURE OF LANGUAGE

Language is a system of conventionalized symbols by which humans communicate ideas. It consists of a set of words and some habitual ways of putting them together (Myers, 1965: 15).

Language is primarily an auditory system of symbols. Its graphic equivalent is written language in which each element (letter or written word) in the system corresponds to a specific element (sound or sound group or spoken word) in the primary system. Although the written forms are secondary symbols of the spoken ones, that is, letter symbols of sound symbols, the correspondence is so close that they may be and are substituted for the spoken ones. In order to convey a message, sound symbols (in speaking) or their graphic counterparts (in writing) are arranged in various language patterns. Successful communication of an idea, be it expressed orally or in printed form, demands of both the sender and the receiver an understanding of the phonemic elements and the syntactic patterns used. However, in the process of the development of the secondary symbol language (written language) syntactic pattern differences do emerge. The differences between the two modes of expression, oral and written, can make it difficult for readers to accurately grasp an author's written message. Therefore, the reader must be aware of both the correspondences and the differences in the language elements and the language systems of which they are a part.

Also inherent in the English language system are meaning cues which serve to guide the reader along the line of thought that the author has taken.

The development of language in the child is essential if he is to be effective in the society and culture in which he lives. Language aids his cognitive development, facilitates his interaction with others in his society, and largely determines his success in school. Of particular importance for academic achievement is his effective comprehension of written language.

Guiding the child toward greater mastery in the use of his language requires an understanding of the basic elements of language, a knowledge of the functioning of its three interdependent systems, an awareness of differences between spoken and written language, and an appreciation of the meaning cues inherent in the English language.

The following discussion of the nature of language shall be organized under these four topics:

1. Basic Elements of the English Language
2. Three Interdependent Systems in English
3. Some Differences Between Spoken and Written Language
4. Meaning Cues

Basic Elements of the English Language

Arranged in a hierarchy of increasing complexity the basic elements of English are phonemes, morphemes, word forms, and constructions.

Phonemes. The phoneme is the minimal unit in language; it "is

a speech sound that signals a difference in meaning" (Stageberg, 1965: 8). The words "dime" and "dine," for example, are similar in sound except for the sounds /m/ and /n/, the phonemes which give the two words two different meanings. Phonemes are not necessarily individual sounds, rather they are a class of similar sounds. Variation in sound is a result of its position in a word. The /l/ in the words "play" and "well," to the linguist's expert ear, have a slight variation in sound. Such variant sounds of a basic phoneme are called allophones.

Connectives and personal pronouns are composed of sounds (phonemes) and sequences of sounds.

Writing is a visual symbolization of language. Written symbols can be understood only insofar as they fit into a linguistic structure. Initially, the child's language develops by imitating the speech model presented to him by adults and others within his environment. Gradually, he acquires an unconscious knowledge of the combinational possibilities within the language's phonemic structure. Such learning must transfer from understanding speech to reading its graphic counterpart. Just as the child, in communicating orally with another, would not attempt a word having as the first two consecutive sounds those of "vd" so, too, if he met this combination in print he would know it was not an English word, for such a combination is not part of the English language system. To relate this to connectives and personal pronouns consider the example, "John is a good football player and he is an excellent student as well." In speech as in reading only "he" is an appropriate substitute for "John" and only "and" is the

proper connective to delineate the intended coordinate relationship.

Morphemes. A morpheme, made up of phonemes, is a word or word part which has meaning. Two further criteria identifying morphemes are: a) it cannot be subdivided into smaller meaningful units without a change in meaning and b) it has a relatively stable meaning. "En," in the word "brighten" meaning "to make light," is a word part. It means "make." It cannot be further divided into a meaningful unit and it recurs with a stable meaning in words such as "sweeten" and "sharpen." Thus, meeting the three criteria, "en" can be considered a morpheme.

Phonemic equivalence does not guarantee that two utterances will have the same meaning. The connective "but," for instance, can have several quite distinct meanings. Note the following:

1. John came but his brother did not.
2. It never rains but it pours.
3. Poor but proud the old man refused to accept charity.
4. No one came but Mary.
5. Though Peter had done wrong his mother was loathe to scold him. "He is but a child," she thought to herself.

The pronoun "she" can have different referents within the same paragraph. Context determines the antecedent. Note the following example taken from the Think-and-Do Workbook used in conjunction with the Curriculum Foundation Series Book 5, New Days and Deeds.

One afternoon, when Mary Brown came to call, Isabel was practising her new piece. She played a few notes, stopped, then played again. She looked up for Mary's approval, for Mary was a good critic, when she was interested. But she had started to read a book and was not listening (98).

The meaning of the printed word "permit" by itself is ambiguous unless placed in a clarifying context. Is it *per*mit or per*mit*?

"Board" and "bored" are homophones but "bored the wood," "bored with life," "board of wood," and "board of directors" are distinguished for meaning by the surrounding context.

It is clear from the given examples that the difference in meaning that is not signalled phonemically is conveyed by a word's functional attributes.

Word Forms. Many grammarians and linguists classify forms or parts of speech by their functional rather than their semantic attributes. For example, the blank in "Mary likes both apples pears" would, in the English language system, be completed by the coordinate connective "and." "Blue," as the designation of a particular colour, is a noun, but functions as an adjective in the phrase, "the blue ribbon." The validity of using the sentence frame to determine part-of-speech membership rests on the combinational probabilities in the English language system.

Some connectives such as "however" would be classed by traditional grammarians as adverbs, but most connectives were called conjunctions. Considering this too heterogeneous a set, Fries (1952) subdivided his function words into several groups one of which he termed connectors. Gleason (1965: 333) refers to these as markers indicating either coordinate or subordinate relationships between ideas.

Fries (1952) and Francis (1958) called pronouns a subclass of nouns for they are used as noun substitutes.

Constructions. Sequences of word forms are called constructions. Expressed differently, constructions are patterns in which forms can

be placed. This includes combinations of phonemes as well as patterns of word sequences. For example, to one acquainted with English a word beginning with /ng/ would be incomprehensible for such a combination is outside the system of this particular language. Jakobson (1965: 5) says,

If the listener receives a message in a language he knows, he correlates it with the code at hand and this code includes all the distinctive features to be manipulated, all their admissible combinations into bundles of concurrent features termed phonemes, and all the rules of concatenating phonemes into sequences -- briefly, all the distinctive vehicles serving primarily to differentiate morphemes and whole words.

" 'See the _____'; 'I own a _____'; 'The _____ is new'; and 'This _____ is mine'" (Brown and Berko, 1967: 297) can be filled with only particular words -- those coming within the category of nouns such as "car," "horse," or "ball." The words "but," "although," or "and" would be incongruent, because they do not fit the particular construction. Transformations (negatives, passives, questions) of the fundamental constructions introduce the many variations of expression possible in the language.

Redundancy is an important element in the determination of language patterns or structures in English and is a "measure of the excess of linguistic signals above the minimum that could carry the message. ... It is a measure of the extent to which each element is predictable from the context" (Gleason, 1965: 458). For example, connectives predict clauses or phrases. In the sentence, "The boy who won the race was my brother," the word "who" signals a subordinate clause and if it were omitted the context would signal the reader that "who" should

be used to fill the blank.

Modelling their speech on that of the adults within their surroundings, children produce language patterns which adhere to these built-in meaning systems. This has been shown by the studies of Berko (1958, 1960) and Brown (1957, 1967) to name two. Does children's use of word forms or classes extend to their manipulation of printed language written for them by others? This study will test pupils' understanding of connectives and personal pronouns. It may be that the results will show a need to strengthen the foundations of our classroom reading programs in teaching these comprehension skills.

Three Interdependent Systems in English

The foregoing subsection has described the hierarchical structure of the English language system, phonemic, morphemic, word forms and sequences of them. To understand the process of communication it is necessary to comprehend how sentence structure contributes to it. Every sentence has a structure but the structure of a sentence is not simply a property of that sentence alone. It is also a reflection of some underlying system which characterizes all the sentences of the language.

"Sentences have structure; languages have system. These are related facts, each making possible the other. Language system involves regularly recurring patterns in sentence structures" (Gleason, 1965: 195). The system of language encompasses not only these recurrent patterns within sentences but also the sets of relationships which exist between pairs of sentences. Enation and agnation are the terms Gleason applies to the two kinds of relationships which exist between

pairs of sentences. Enation involves constructions having identical parts of speech, syntactic relationships, and structure signals. Only the vocabulary in the two is different. The following two sentences are enate.

1. "The dog bit the man."
2. "The cat ate the canary." (Gleason, 1965: 197)

Agnation involves sentences having very similar vocabulary but different structures. The meaning conveyed by the two agnate sentences is similar. The two sentences which follow are agnate to each other:

1. "The dog bit the man."
2. "The man was bitten by the dog."

Enation and agnation are not qualities of isolated pairs of sentences but are recurrent in the language system. They are dependent, one upon the other. "Just as structure and system are mutually interdependent, so are structure and relation" (Gleason, 1965: 195).

Though functioning as a unit, the English language subsumes three interdependent, interconnected systems -- phonology, grammar, and semology. Together they determine the structure of English,

Phonology. Phonology identifies the characteristic sound features of English -- consonants, vowels, stress, and intonation. The phoneme, described previously, is the basic unit of this system.

Grammar. Grammar is a system built on meaning units or morphemes and the relationships among the elements within words and between groups of words. It controls how words are combined to constitute sentences. Grammar includes a) morphology -- the study of word structure (roots and affixes) and b) syntax -- the study of

the relationships of words in phrases, clauses, and sentences. This latter is necessary because sentences are typically composed of structures within structures. Connectives and personal pronouns function to relate these.

Semology. A sentence not only has a phonemic and grammatical system but has a meaning as well. This meaning is built into the language structures. Semology is the third system of meaning contrasts and patterns of sense organization. The structures provided by a language limit the way in which thoughts can be expressed. For example, every noun is either singular or plural; English phonology excludes certain sequences of consonants such as "sz'." To illustrate the sense organization aspect of semology Gleason (1965: 295) contrasts "sleeping car" with "sleeping dog." The word "sleeping" is constant and is placed similarly in conjunction to the things it describes, yet the meaning is very dissimilar. The three systems described operate interdependently both in spoken and in written language.

Spoken and Written Language

Though the assumption may be that the structure of spoken and written language is identical in all relevant aspects, this is not the case. In reading texts, and of special interest to this study, social studies texts, pupils frequently meet structures and meanings which are different from the familiar ones used in their spoken language.

Linguists stress oral language as the primary form. There are similarities between it and written language. Jenkinson (1967: 337) states that, "Comprehension of spoken and of written language are not

entirely independent processes." However, not all the features of spoken messages are represented in the writing system. This latter employs paragraphing, punctuation, and different spellings for phonemic equivalents (e.g. "read" and "reed") as cues to meaning. Carroll (1964) states that, "..... written language must always be regarded as spoken language 'written down' "; however, he adds that it is expressed in a special written style, one which research has shown to differ from the way pupils use the language themselves and which, therefore, may cause reading comprehension problems.

In a recent article Jenkinson (1967: 182) lists several syntactically complex elements which occur with greater frequency in written language than in oral language. Among these are passives, greater variety of tense forms, greater variety of subordinate clauses, and phrases in apposition. Mature writing is not usually patterned on spoken English and it is the mature writing with which pupils must cope in social studies readings. How well do pupils in grades four to six comprehend the connectives and personal pronouns in such material? This is the question which the present investigation shall explore.

Meaning Cues

Children must learn the structures of the language in order to understand the meaning the language conveys. Inherent in sentences are signals which help the listener or reader discern the structure. Written English has several major recurring meaning signalling devices -- function words, word order, derivational contrasts, inflections, and prosodic patterns (Gleason, 1965: 168). These supplement and reinforce

one another. The function words are of particular importance in this study of reading comprehension.

The cues lead the listener or reader to expect certain structures. Connectives lead the reader to expect a clause. "Which" for example, signals the fact that the structure to follow is an included element dependent on a main clause. "Because" prepares the reader to grasp a structure showing a cause and effect relationship. "Before" and "after" caution the reader that a time or order sequence is included in the passage. "He" or "they" require the reader to comprehend structures indicating sequence of characters and antecedents.

Some children use these patterns in their speech but appear to be unable to use them in a flexible way especially in understanding the meaning they convey in the speech of adults (Vygotsky, 1962: 126-127) and possibly in reading them in print with accurate comprehension (Robertson, 1966: 315-316). Immature concepts can be hidden by an apparent easy flow of language. Accurate use and understanding of connectives requires precision in thinking. This study proposes to assess pupils' reading comprehension of designated function words in social studies passages.

Summary

The structure of the English language is determined by three underlying interdependent systems -- phonology, grammar, and semology. The three work together in conveying meaning whether through spoken or written language. Inherent in the language are signals which help the listener or reader discern the structure and grasp the meaning of the message. Function words form one such group. Connectives are

signals which lead the listener or reader to expect clauses. This study is investigating reading comprehension of connectives and personal pronouns in social studies passages by pupils in grades four, five, and six.

II. THE NATURE OF READING COMPREHENSION

Reading, in this study, is limited to meaning comprehension of printed language. Strictly speaking, a person cannot be said to be reading unless he is comprehending and in turn cannot be said to be comprehending unless he is thinking. So it is that many authorities on the subject of reading define it as a thinking process (Betts, 1959: 146; Harris, 1961: 8; Bond and Tinker, 1957: 19; Jenkinson, 1967; Gray, 1960: 20). The reading process, say Bond and Tinker (1957: 19), involves both the acquisition of the meanings intended by the writer and the reader's own contribution in the form of interpretation, evaluation and reflection about these meanings.

The following discussion on the nature of reading comprehension shall consider the behavior theory of Osgood (1964) and the reading theories of Gray (1960), and Jenkinson (1957, 1967).

Osgood's theory of behaviour analyzes perception and language as cognitive phenomena and shall be dealt with first as a prelude to the theories of reading held by Gray and Jenkinson, both well-known authorities in the field.

Osgood's model (1964) of behaviour in terms of perception and language, envisages two stages each having three levels of organization between the stimulus and the response. Decoding and encoding are the two stages; projection, integration, and representation are the names

of the three levels in order of increasing complexity of process.

The reading process can be viewed in these terms as well. Decoding is the interpretation of environmental phenomena whereas encoding refers to the response an individual makes to these. In the reading process decoding means "breaking the code" -- determining what the letter symbols stand for. Encoding is the reconstruction of the author's meaning in terms of the reader's level of language development, cognitive function, and background of experience.

At the projection level, stimuli impulses (in reading, the letter symbols on the page) are received (form impressions on the retina) and are transmitted to the brain (are perceived).

At the second level, called integration, the perceptions are organized on the basis of associations between the new and the old data. For example, in attempting the pronunciation of an unfamiliar word, "however," the reader may, knowing its separate word components, "how" and "ever," first divide the word then integrate the parts to form the new word.

The final stage of decoding and the initial phase of the encoding process is the representational level. This is a mediating cognitive process between the stimulus and the response wherein stimuli data acquire a significance or meaning irrespective of their momentary physical characteristics and culminates in intentional behaviour that takes account of such significances. In relation to the reader this means a going beyond the literal grasp of the author's meaning to interpreting, reflecting upon, and evaluating the message communicated by print. An understanding of connectives and personal

pronouns is vital here, for the reader must clearly perceive how the ideas within sentences, from sentence to sentence, and from paragraph to paragraph have been associated by the author so that he can make inferences, reach conclusions, and evaluate what is read. This is reading comprehension at a mature level.

Gray's model (1960) of the reading process, though expressed in different terminology, is compatible with Osgood's view of human's perception and language behaviour.

The development of efficient reading habits requires a carefully planned sequence of learning experiences. The understandings, attitudes, and skill components of a reading activity in process form a psychologically coherent unit, but have been divided, by Gray, for purposes of clear presentation, into four parts. Each part represents an advancement in depth of awareness or understanding.

1. word perception
2. comprehension
3. reaction to what is read
4. fusion of new ideas and old

Gray's is a meaning-centered approach.

The reader, anticipating meaning, directs his mind to the printed page. As his eyes focus on the print, impressions are received by the retina, changed into neural impulses, and are transmitted to the visual centers in the brain. Familiar words and pronunciations are recognized; unfamiliar ones require the application of further skills in word attack (context clues, phonic or structural analysis) before recognition comes. These activities correspond to the

projection level stage in Osgood's decoding stage.

Next, says Gray, meaning associations (integration for Osgood) are aroused by the incoming data and held in memory as the reader continues along the lines of print until, at the end of the word, sentence, or paragraph unit, they are fused into a meaningful whole. Connectives and personal pronouns help the reader order and associate the incoming ideas so that comprehension is accurate. At this point a literal understanding of the writer's meaning is reached.

The good reader reacts to what he reads. To do so he must bring his past experience to bear in the present situation. New ideas are reinforced or rejected, false understandings are corrected, greater depth of insight and a broadening of attitudes are attained. Once the fusion or assimilation is effected these become part of the reader's mental resources to be used in future reading and thinking experiences. The reaction and fusion processes in Gray's theory are reminiscent of Osgood's representation level, the mediating process between the decoding (input) and encoding (output) stages.

Jenkinson (1967) defined reading as a thinking process triggered by printed letter symbols. In her theoretical model of reading comprehension she discusses two major facets of the reading process, perceptual comprehension and verbal comprehension, which parallel Osgood's decoding and encoding processes. Perceptual comprehension refers to the means by which symbols become translated into spoken sounds and cognitive equivalents to produce words. Similarity between this and Osgood's projection and integration levels and Gray's word perception phase seems clear. Verbal comprehension is

referred to as symbolization through the use of words and could possibly be considered akin to Osgood's representational level.

Reading comprehension is a category of the more encompassing area of verbal comprehension. Two aspects of verbal comprehension, vocabulary and syntax, are necessary components of verbal cognitive manipulation. An understanding of the functional words, connectives and personal pronouns, facilitates the reader's grasp of an author's systematic arrangement of his written communication.

As a thinking process, reading involves three distinct but interlocking features -- the writer's cognitive processes, the reader's cognitive processes, and the reader's maturational level in language and cognition.

The writer's cognitive processes are revealed not only in what he says but also by how he says it -- the style he chooses to employ in communicating his thoughts in print. Writers frequently adopt characteristic ways of associating ideas. One of these may be the use of particular connectives and pronouns.

The production of new thinking (Gray's reaction and fusion phase) is the ultimate goal of the reading process. Clear communication between writer and reader is essential to attain this end. The quality of the reader's cognitive processes and his maturational level in language and cognition are important factors affecting success or failure in this communication.

With reference to the reader, Jenkinson calls reading a "gap-filling" process involving cognitive operations of interpolation, extrapolation, and synthesis, the means by which the reader is able to

bridge the gap between what the writer says and the meaning he himself gets from it. The reader must insert information (interpolation) derived from his previous knowledge and experience to complete the information given by the writer. Further, the reader must go beyond the facts given (extrapolation) and draw his own inferences and conclusions over and above those reached by the author. Synthesis, or assimilation as Gray calls it, is a culminating point in the process. At this stage the reader evaluates what has been read and formulates judgments.

Sections I and II have considered the nature of language and the nature of reading comprehension separately and from a theoretical viewpoint. Section III shall relate the two and discuss their development in the child.

III. LANGUAGE DEVELOPMENT AND READING COMPREHENSION

An understanding of the problems children may encounter in reading can be facilitated by an awareness of the sequence of development of thought and language in the child, by an understanding of the differences between spoken and printed language, and by an appreciation of the relationship between children's oral and written language and their reading comprehension. Section III will elaborate on these topics.

Development of Thought in Children

Piaget, the noted Swiss psychologist, delineates four main stages of mental development through which all normal children pass though the ages at which they reach each successive stage varies with

the individual.

The first step is reached at about age two when the child, having interacted with his environment, is able to grasp the invariant features within his surroundings. This is the initial stage which is prerequisite to the development of thought and language.

On the following level, called the pre-operational stage, the child's responses gradually become internalized; however, although the child can recognize relationships among the perceptual invariants with which he is familiar, he can attend to only one property of an object or experience at a time.

At the concrete operational stage which follows, the child uses logic and reasoning in a very elementary way. He can classify objects, perceive relations, and deal with numbers but at the concrete level. That is, he can manipulate concrete, tangible objects but not verbal propositions. It is not before the ages of eleven or twelve that operations can be applied in hypothetical situations.

The final stage, occurring at the time of adolescence, is that of formal propositional thinking. The child can now formulate and test hypotheses and anticipate outcomes and consequences in the absence of concrete objects.

The development of thought is closely linked with and facilitated by the acquisition of and competence in language. This study, involving pupils in grades four, five, and six will find the majority of them at the level of concrete operations though necessarily at different levels of development within this category. At this stage the pupils should have good control of the informal oral

and written language they use, but it may be that their cognitive development has not reached the point at which they can grasp clearly the meanings of the formal language of print which, to associate ideas in coordinate and subordinate relationships, makes use of connectives which children do not usually choose to use in their speech and writing. Developmental lessons directed toward a conscious awareness of how these words interrelate ideas could facilitate pupils' reading comprehension skills.

Language and Thought

Language serves two major functions. First, it is a system of responses enabling individuals to communicate with each other (interpersonal) and second, it facilitates thinking and action for the individual (intrapersonal). Thinking is facilitated by the use of language, because words stand for concepts which can be manipulated as verbal forms much more readily than the concrete objects or events thus represented.

The child learns to categorize speech by patterning his pointing responses to commands such as "Show me your nose, eyes, etc." His efforts to produce sounds similar to those of his tutor are reinforced until he becomes aware of the equivalence or non-equivalence of his sounds and those of his model. The most critical aspect of language development is the categorization of the concepts that pattern speech. That the child has the capacity to respond to the patterning in language is evidenced by the fact that even at an early age he produces incorrect analogical formations such as "taked" instead of "took." The child may be said to absorb his

knowledge of the use of language. He may be said to have an intuitive grasp of the language.

Facility in thinking may be enhanced by familiarizing pupils with the linguistic constructions used and the meaning contained therein. A grasp of grammar is the critical point at which language structure begins to be a catalyst helping thinking reach beyond the limits it encounters devoid of language. Understanding of grammatical constructions can help children learn, remember, and manipulate more complex concepts. Bernstein (1961: 307) attested to this when he stated that language structures and conditions what and how a child learns and sets limits for future learning. An understanding of connectives and personal pronouns facilitates pupils' awareness of how the written material they read has been organized. Awareness of the author's structure aids comprehension and may increase retention.

The idea that the structure of one's language affects one's thought processes may be called the linguistic-relativity hypothesis because it asserts that thought is relative to the language in which it is processed. As Whorf (1956: 213) says, "We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way -- an agreement that holds through our speech community and is codified in the patterns of our language." Some linguists report that languages not only differ in the sounds they use but also in the concepts they code. Carroll (1964: 90) defines a concept as "an internal representation of a class of experiences." Without having the concept a child can utter its linguistic counterpart simply by echoing what

his parents say. The meaningful use of words, however, implies the acquisition of the appropriate concept underlying such a response. The potency of the concept in behaviour is enhanced by the labelling process. Attaching a verbal tag to a stimulus enhances the total discriminability of that stimulus in relation to other stimuli.

At the outset, language functions primarily as a means of communication; gradually, it becomes the most important mediator and regulator of behaviour. The child at first verbalizes all his thoughts aloud. Eventually speech becomes contracted and internal. "The child's speech in this contracted form, is indissolubly linked with his thinking, and continues to share in those forms of activity which the child now performs in silence" (Mussen, 1963: 46).

Language of Print and Reading Comprehension

By the time they enter school, children have a working oral command of the basic structures of the English language and the major sound patterns of the English sentence. The studies of Brown (1957), Berko (1958, 1960), and Harrell (1957) prove that this is so. In school they are faced with the task of reading language in print which others have prepared for them. The language of print differs considerably from the oral language children use and thus problems may ensue despite the good teaching to which they are exposed.

Many in the field of language hold the view that there are various forms of language. Among these are Watts (1944: 74-76, 124) and Bernstein (1967: 94-100) who speak of formal and informal or public language. Children are familiar with the informal but must be taught the structural and vocabulary differences found in formal

language. Materials written by adults contain a greater number and variety of coordinate and particularly subordinate language constructions involving the use of connectives which children, in their speech and writing, use less frequently and with less precision. Children, for example, tend to use the relative pronoun "that" instead of "which," the one more commonly found in the formal printed language they read. The use of "it" as an anticipatory object where it precedes that for which it stands is also a difficult construction for children to understand.

Gleason (1965) also speaks of different forms of language. He posits that there are fundamental differences between spoken and written English. He writes of the great differences which become apparent when a speech is transcribed to written form or vice versa. Gleason refers to this as a translation from one language form to another. The translation of speech to written form requires the addition of certain different signals; the deletion of others. Word order in formal writing differs considerably from that of speech. The result is often a major restructuring of sentence patterns. For example, in everyday conversation the sentence "And so they thought John had committed the crime" would be a usual and accepted way of expressing the thought. In a formal written style, the same thought might be expressed as "It was alleged, therefore, that John had committed the crime." "The variation in written language cannot be treated merely as a projection of speech variation into a new medium" (Gleason, 1965: 369).

Reading requires pupils to draw upon their knowledge of both

oral and written language. This requires an auditory-visual association of sounds with their graphic counterparts as found on the printed page. "The visual symbols of the writing system are perceived as graphic configurations which are then converted into their appropriate and corresponding vocal symbols and then presumably apprehended as audible symbols through the instantaneous process of monitoring" (Scott, 1966: 353). Besides this grasp of grapheme-phoneme correspondences an understanding of the language structures is important as well.

Ruddell (1967) compared grade two pupils' performance in two basal reading programs which gave different emphasis to the regularity of grapheme-phoneme correspondences and the relation of language structures to meaning. One program, referred to as A, displayed high grapheme-phoneme correspondence in the presentation of new vocabulary but the second, labelled B, made no such provision. He supplemented the reading instruction of both programs with lessons which stressed language structures and their relation to meaning. Pupils were taught word substitution, pattern expansion and elaboration, pattern inversion, and pattern transformations. A third program, C, consisted of pupils exposed to program A but they received no additional language meaning instruction.

The results of testing showed that those in program A were significantly in advance of those exposed to program B in word meaning, word identification, and irregular word identification. A comparison of programs A and C evidenced the superiority of A over C in paragraph meaning. Ruddell concluded that paragraph meaning and

sentence meaning achievement of second graders at the end of grade two are a function of the control which the children exhibit over designated aspects of their morphological and syntactical language systems. Understanding of connectives and personal pronouns by which authors associate ideas is an important factor affecting reading comprehension.

Abrams (1966) examined the relationship between listening and reading comprehension skill in message structuralization. He hypothesized that the three are highly correlated. In his study recognition of structure included the ability to isolate the central idea, to differentiate main and supporting ideas, to recognize chronological, spatial, topical, and cause-effect patterns. Data obtained from one hundred subjects of pre-college age showed that the ability to recognize the structure of a written message, reading comprehension, and listening comprehension are significantly interrelated (Abrams, 1966: 302).

As previously mentioned, there are cue systems or signals inherent in the language structure which help the reader to obtain meaning from what he reads. One learning to read his native language has already internalized these cue systems to the point where he responds to them automatically, almost on an unconscious level. The child needs to be made conscious of the similarities and the differences between oral language which uses units of sound symbols and written language which depends on both graphic symbols and their sound counterparts. The listener and reader play different roles with respect to the primary symbols to which they respond. The listener is cued by

patterns of audible sounds whereas the reader reacts to patterned visual stimuli. The reader has the more difficult task to perform because the reading process involves the interpretation of visual as well as vocal and audible symbols.

Common structural features in print resembling those of speech present few problems for the reader. It is the frequently occurring patterns of formal language in print, with which the child is not acquainted, which can prevent him from grasping the import of a written message, for, although the child may use certain constructions orally, understanding them in reading develops gradually. The child, as a reader, must use the language of adults to succeed academically. To function effectively he must continuously strive to approximate their use of language.

Children's Oral Language and Reading Comprehension

Many studies have been carried out to determine the effect of pupils' grasp of oral language upon their ability to read with comprehension.

Children encounter difficulties in school in the area of reading comprehension of written material especially in subjects such as social studies. Textbook writers usually adopt a formal expository style of writing unlike that of children's speech. In her study, Strickland (1962) stated that if the formal language of print more closely approximated the oral language patterns of elementary school children, reading comprehension would be facilitated.

Ruddell (1965) investigated the effect of the similarity of oral and written patterns of language structures on the reading

comprehension of fourth-grade students. He used six reading passages which contained language patterns found in both high and low frequency in the oral language of pupils at this grade level. The passages were taken from science material and cloze comprehension tests, deleting every fifth word, were administered. Control was provided for the variables of intelligence, mental age, chronological age, sex, socio-economic status, and parents' educational backgrounds.

In constructing the reading passages, Ruddell adhered to patterns of language structure in the same proportional frequency in which they occurred in the oral language of children in the fourth grade. Three passages contained structures of high frequency; three were of low frequency. Vocabulary and sentence length were controlled. The results showed that reading comprehension was a function of the degree to which language patterns approximated those children use in their oral language (Ruddell, 1965: 270-74). The scores on passages containing high frequency patterns were significantly greater than scores on passages using low frequency patterns. Ruddell concluded that reading comprehension could be facilitated considerably by casting reading materials in patterns resembling children's oral language. It must be realized, however, that more advanced styles of writing must necessarily be presented to children especially at the end of elementary school as a preparation for their work in junior high school. Nevertheless, a wiser approach in our reading programs might be to provide for a more gradual transition from the simple and familiar to the more complex language structures.

One problem area is children's comprehension of clause

structures. As stated, structures of subordination involving sequence, cause and effect, comparisons, and so on abound in social studies texts. O'Donnell, Griffin, and Norris (1967) conducted a study with 180 pupils in grades one, two, three, five, and seven to determine the growth pattern in their use of syntactic structures in their speech and writing. From grade to grade level the largest overall increases were found to be in the use of coordinate constructions within clauses and subclausal adverbial and nominal constructions. From grades one to three greater control of syntax was evident in speech than in writing; the reverse was true for grades five and seven. This results from the shift in emphasis from listening and speaking in the primary grades to reading and writing in the intermediate grades, four to six. Although pupils use connectives and personal pronouns in their speech and writing, their reading comprehension of these elements in material written by others may develop more slowly.

The language patterns used by an author determine the relationships among ideas he wishes to communicate to his reader. Facility in the recognition of these different patterns, in part, determines the speed and accuracy of the reader's comprehension. Robinson (1967) wrote easy reading material in a complex style and formulated comprehension questions for each passage. Although intelligence was found to be a factor contributing to ease of reading understanding, it reportedly did not, in this study, have a significant bearing on the ability to read involved styles of writing. Understanding of language structures was found to be the most important

factor.

Children's Written Language and Reading Comprehension

In attempting to assess problem areas children may encounter in their reading, it is well to consider the pupils' stage of development in their use of written language.

Bear (1939) conducted a study to determine when pupils begin to use complex sentences and what qualities of sentence length were characteristic of their writing in grades one to twelve. The following were among her findings. There was an increase in sentence length (girls superior to boys) from grades one to six, at which time there appeared to be a levelling off. A general tendency to use compound sentences increased from year to year but complex sentences were more prevalent than the former. By eighth grade approximately one-third of the sentences were complex in character and were used by about 93 per cent of the children. Here, too, the performance of girls was superior to that of the boys. Bear concluded that the use of complex sentences was indicative of maturity in the use of language.

Hunt (1965) studied the changes evident in the sentence structures used by children as they mature in writing. He tallied the average length of sentences (a unit punctuated with a capital letter and a period) and clauses (an expression with a subject or coordinated subjects and finite or coordinated verbs), the number of subordinate and main clauses, and the proportions in which they occurred. He used the "T-unit" as his difficulty index. This minimal terminable unit consisted of the main clause and the subordinate clause or clauses contained within or attached to the dependent clause. "As

a potential index of maturity, the T-unit has the advantage of preserving all the subordination achieved by a student, and all of his coordination between words and phrases and subordinate clauses" (Hunt, 1965: 21). Commenting on the index which most accurately accounted for the maturity of a passage, Hunt stated that the T-unit was best; mean clause length was second; subordination-ratio ranked third, and length of sentence proved to be the poorest. Having divided pupils' writing into T-units, the mean length of these was computed for each grade. The means were 8.6, 11.5, and 14.4, a significant increase for grade at the .01 level. His research showed a consistent increase in the use of subordinate structures from grades four (1.3) to eight (1.4) to twelve (1.6) (Hunt, 1965: 35). (The designation, 1.3, means that pupils incorporated subordinate clauses into their writing only three-tenths as often as they used simple sentences). The use of these sentence patterns then doubles between grades four and twelve. Hunt concluded that the relating of subordinate to main clauses is evidence of maturity in language. Strickland concedes, "The best single criterion of maturity in expression appears to be the children's use of complex sentences" (1962: 12).

The work of LaBrant (1943: 423) and Watts (1944: 124) both suggest that there is a relationship between maturation and the development of complex language structure. The two studies found that the use of dependent clauses increased with chronological age. LaBrant's findings revealed that mental age was not a significant factor; Watt's results indicated otherwise. Contrary to LaBrant's

findings, Watts' research showed that children frequently used noun clauses (used as objects; however, they infrequently used noun clauses in the subject position). Both studies found that the use of adverb clauses of condition, concession, and comparison by children was rare. The teaching of these structures and how they help interrelate ideas could be beneficial in advancing pupils' reading comprehension of social studies material in which they frequently occur.

The percentage of the frequency with which subordinate clauses appear in the writing of pupils of ages nine to twelve years has been calculated with certain variations by several researchers. Harrell (1957: 34-35) reported 11.6 per cent, Watts (1944: 123) 27.4 per cent, and LaBrant (1933: 387-491) 19.0 per cent. Regardless of the difference in percentages, all three showed that use of such structures increased from year to year. The reverse was true regarding children's use of coordinate clauses. From year to year the ratio of coordinate to subordinate type clauses decreased. Hoppes (1957: 68) who studied this aspect of children's use of language structures in grades four to six found such a decline to be evident as well.

Not only is it important to consider the amount of subordinate and coordinate clauses pupils incorporate into their written communication but also to study the kinds of clauses they use as they advance in school.

Watts (1944: 125) analyzed written stories to assess pupils' use of dependent clauses. He reported that adjective clauses were a rarity in their writing. Noun clauses were used least by American students but more frequently by British students. Adverb clauses of

time, cause, and comparison, in that order, were those most frequently used. He stated that, ".....complex sentences do not begin to appear freely in children's work before the age of eleven."

LaBrant (1933: 463) investigated children's language development regarding their written use of clauses, independent and dependent. Noun clauses were used frequently as were those used adjectively, though pupils' difficulty in structuring these latter types was evident. Adverb clauses of condition, concession, place, purpose, and comparison were used least frequently in grades four to nine. The use of dependent clauses increased not only in frequency from grade to grade but in quality as well, though the length of clauses remained fairly equal. The improvement was due to a more precise expression of relations between clauses. LaBrant claimed that, "increase of subordination is paralleled by increasing exactness in the use of connectives."

Harrell's study (1967) comparing the development of oral and written language in school-age children showed that pupils in grades four to six infrequently used clauses of condition, place, concession, and purpose.

It would seem that reading comprehension of language structures used infrequently in pupils' speech and/or in their writing could be facilitated in part by teaching pupils the connectives used in relating subordinate and main clauses.

Additional Complicating Factors

In a follow-up study of his previous research, Hunt (1966) found that there was an additional factor other than the use of

subordinate clauses contributing to maturity in writing. He stated that syntactic development was greatest with succinctness in sentences in which clauses were reduced to phrases or single words. Older pupils reduced more of their coordinate clauses to subordinate clause status and their clauses, main or subordinate, had more words in them.

Hunt (1966: 739) stated that it is important to compare the syntactic traits that make sentences hard to read. Better appreciation of pupils' difficulties can be gained by comparing sentences written by children with those read by them but written by adults.

The difficulty in reading sentences lies down inside the clause. Longer clauses tend to be more difficult. On the basis of previous research on what constitutes these clauses, it seems clear what it is that makes longer clauses harder to read and harder to write. On the whole, longer clauses have a larger number of sentences or clauses reduced and consolidated into one . . . It is the reduction and consolidation of many clauses into one which is intricately related to syntactic growth both in writing and reading. If writers must build up clauses, then readers must break them down.

(Hunt, 1966: 739)

The skillful management of the long sentence is a complicated task requiring the proper emphasis of the major elements and the due subordination of what is less important.

Gleason (1965) has pointed out difficulties encountered in reading the parenthetical relative clause. It is a construction normally restricted to literary writing. The main problem appears to be in locating the antecedent to which the pronoun refers for, unlike the restrictive relative clause wherein it is closely related in position to the noun it modifies, this is not so in the former instance.

Davis (1944) stated that in children's written use of

relative pronouns "that" occurred more regularly than "who," "which," or "what." Thus pupils may experience difficulty in reading textbook material in which "who," "which," and "what," more precise terms than "that," are used frequently.

Objectively speaking, children and adults use the same language code; however, their understanding and use of it differs. Aspects of the frequency and types of clauses used, succinctness of expression, the accurate location of antecedents, and other complexities of language can impede children's comprehension of material written for them by adults. In such writing the child meets varieties of expression he does not choose to use in his speech or writing and therefore, when required to read them has difficulty doing so.

IV. READING IN SOCIAL STUDIES

Verbal learning abilities are usually classified as receptive (listening and reading) and expressive (speaking and writing). The school language arts programs are designed to further these language abilities in children. "But since none of the modes of verbal learning possess any inherent subject matter, the content areas of the curriculum play an exceedingly important role in helping the child grow in the use of his own language" (Douglass, 1967: 373).

No materials contribute more to learning in the social studies than do reading materials. Witty (1965) states that beyond the primary grades reading is doubtlessly the most important skill for achieving success in the social studies. Reading such material

requires special reading skills. In the middle grades pupils need to make a difficult transition from reading fiction with characters and story content to factual materials which frequently deal with events removed from the pupil either in space or time.

Basic to the acquisition of concepts through reading in social studies or in any field of study is the ability to recognize the way in which the material is organized, whether in sequence or logically, and to see the relationships that are stated directly or implied; to analyze connections between events so that inferences can be made as to cause and effect; to form mental images of space and distance; to recall and make judgments from the perspective gained by combining past experiences with present knowledge; and to see similarities between what is read with what has been previously experienced or determine what can be applied to present-day life.

(Huus, 1963: 107)

Learning to make sequential, logical, cause-effect, and space relationships, and determining their significance and application are important tasks of reading in the social studies. The developmental reading programs usually concentrate on developing basic reading skills only. A special application of these abilities is needed in reading social studies material. Some obstacles to comprehension in social studies are inherent in the material itself. These range from difficulties with proper names to special terminology, to words with shifting referents, to recognizing cause-effect, sequence, part-whole, place, quantitative, and analogous relationships. Fiction is usually written in a subjective style whereas social studies readings more frequently have an objective reportorial mode of expression. The number and compactness of ideas discussed in social studies can be another source of difficulty in reading for the pupil in grades four to six.

Other impediments to comprehension are inherent in the reader. His mental ability, background of information, richness of vocabulary, command of sophisticated language patterns, attitudes, and sense of values are important factors functioning in the reading process.

Studies dealing with the relationship between general reading ability and achievement in the various content areas attest to the importance of a strong basic program. Lee (1933) says that a minimum of fourth-grade reading achievement is needed for reading social studies material in grades four to six. Rudolf (1949) found that eighth-grade pupils given specific lessons in reading skills needed in social studies showed greater gains in social studies knowledge, study skills, and reading comprehension than a comparable group that received no special instruction. Working with ninth-grade pupils, Brownell (1952) investigated the influence of training in reading upon the ability to think critically in social studies. He noted significant gains in interpretation, critical reaction, and reasoning for the trained group. Covell (1955) studied the characteristics of good and poor readers of social studies material at the high-school level. Among the characteristics of good readers were: a broad, specialized social studies vocabulary, accurate understanding of time and place concepts; a good command of metaphorical language, strength in general vocabulary and sentence and paragraph comprehension; and better than average mental ability.

Understanding the relationship between ideas is an important skill in social studies. Among the meaning signals used by authors to express associations of cause-effect, time, space, comparison, and

reference between ideas are connectives and personal pronouns. The present study was undertaken to determine how well pupils in grades four, five, and six understand the connectives and personal pronouns they read in randomly selected social studies passages.

V. FUNCTION OF CONNECTIVES AND PERSONAL PRONOUNS

An important role in specifying meaning is played by connectives and personal pronouns, subclasses of function words. Francis (1958: 233) states that structure words serve to vary the functions of the lexical words with which they appear according to the needs of the overall structure. That is, they help to build the basic words into a structure. For example, the relationships between the parts within structures of coordination and subordination are signalled largely by connectives. The relationships of main to dependent idea, sequence, cause and effect, and comparisons, to name a few, are depicted by the use of these connectors.

Connectives

Each connector has a range of levels at which it can be used. Connectors can be single words joining equivalent units. e.g. "a bright and shiny dime; a tattered but beloved doll. They can be used to connect phrases and clauses in a sentence. e.g. "He was in a hurry and I hardly had a chance to see him" (Gleason, 1965: 342). Words such as "and," "but," and "or" are not used to connect larger units. Their range of influence is limited to joining words and clauses within sentences or closely connected sentences. Other connectors, such as "moreover" and "however," could be called sentence

linkers as they are often used specifically to join larger units. One construction is frequently dependent on another clause in the sentence. Subordination is signalled by words such as "because" (cause and effect), "then" (sequence), and "than" (comparison), or by the use of relative pronouns such as "who" in the sentence, "The man who left is my uncle." Phrases, as "rather than," "as well as," and correlatives among which are "not only . . . but also" and "either . . . or" function as connectors as well.

The classification of connectors depends on the units connected and the kinds of relationships they show. Among the one-word connectives are: a) those linking clause to clause or clause to other words within the sentence. Some connectives function to introduce a subordinate clause to another clause in the sentence. Subdivisions of clause linkers are: i) those which serve only to introduce the words of the clause but have no function in the noun, adjective, or adverb clause of which they are part. e.g. She knew that he would come. "That" indicates that what follows, namely, "he would come," is subordinate to "she knew" and introduces this noun clause as such. Some grammarians call such connectives "simple includers." ii) In other instances, the connective, in addition to signalling a dependent clause, can also function as subject or object of the clause. e.g. The man who sat in the red leather chair has been nominated for president. "Who," as well as introducing the clause, is itself the subject of the clause.

Among the one-word connectives are those which are attached to clauses which do not function within the sentence as a noun,

adjective, or adverb and which connect two independent clauses. These are called coordinate clause connectives. "And," "but," "for," and "yet" are included in this category. e.g. John went to the show but Tom stayed at home. Sentence linkers, those which connect one sentence with another, do not function as nouns or adjectives in the sentences they join.

Among the coordinating relationships are those that can be classified as follows :

- | | |
|----------------|--|
| a) cumulative | e.g. likewise, in addition to, furthermore |
| b) disjunctive | e.g. nor, lest, otherwise |
| c) adversative | e.g. however, nevertheless |
| d) illative | e.g. therefore, so |

(Gleason, 1965: 343)

English has a great variety of clause connectors having varying patterns of use. This feature of the language gives it great flexibility. The present study will be concerned with only one-word connectives because of the cloze testing procedure being used to check pupils' understanding of these connectives. The cloze procedure requires pupils to fill in one-word answers in blank spaces of uniform length.

Personal Pronouns

Pronouns are a subclass of nouns. Though various kinds exist -- personal, relative, and interrogative -- this investigation is concerned only with personal pronouns; that is, those which designate the speaker, the person spoken to, or the person or thing spoken about.

Pronouns can stand for a single noun as in "James is a doctor.

He is a doctor." "He" stands for "James." A pronoun can be substituted for a noun phrase. e.g. "My new house is large. It is large." "It" refers to "my new house." The example, "If you touch the hot stove, you'll burn yourself. Don't do it" (Gleason, 1965: 344), illustrates a more complex level of substitution. "It," in this sentence, stands for "touch the hot stove." Such are called anaphoric substitutes. Anaphora serves as a structural device which enables speaker and writer to avoid needless repetition. "Much more important, it serves as a signal for connectedness between clauses or sentences" (Gleason, 1965: 344). Use of this is restricted to instances in which the two occurrences to be linked are in the same sentence or in ones which are closely connected.

The most important type of anaphora relates to the third person pronouns, "he, she, it, they," and their inflected forms. Occasionally, pronouns can be used in anaphoric-like ways when the reference does not appear in the discourse but is evident from the nonlinguistic context, as when one, while pointing to a specific object, asks, "What is it?"

A difficult construction for children to understand is the use of "it" as an anticipatory object. It precedes that for which it stands. e.g. "I found it difficult to refuse him his request" (Curme, 1947: 63.B3).

Because pronouns are used to designate characters or events initially described by noun phrases, they usually occur in noninitial clauses more frequently than in initial ones. It is important for comprehension, therefore, that pupils are able to locate the correct

antecedent for which the pronouns stand in understanding the relationships between characters and events in what they read.

Connectives and personal pronouns can work together to help the reader associate ideas. It is important to grasp the functioning of the two signals together. Pupils have problems with this as Bormuth's study showed (1966). Using the cloze technique with pupils in grades four to eight, he conducted a study to determine the comprehension difficulty of twenty passages. He further analyzed the difficulty level in terms of each word, each independent clause, and each sentence within the passage. He was interested in exploring whether or not the new linguistic variables would provide better predictions of readability than the older traditional ones such as number of words not in a specific word list, mean sentence length, and so on. The results showed a multiple correlation of .934 between linguistic variables and passage difficulty. A significant finding for the present study was that part-of-speech variables exhibited very high correlations with difficulty. The ratio between the number of pronouns and conjunctions in a passage exhibited a correlation of .81 with passage difficulty. Those ranking next in order of difficulty were the ratios of verb/conjunction, adverb/conjunction, and interjection/conjunction.

It is the purpose of this investigation to determine if understanding of personal pronouns and connectives is a problem area in reading social studies material for pupils in grades four, five, and six.

VI. CHILDREN'S USE OF CONNECTIVES

As previously stated, language and thought are closely associated. Through language, the child is freed from the necessity of tangibly interacting with his immediate environment for purposes of learning and communicating. He can consider past events and hypothesize outcomes of events in the future. He manipulates his learning, is able to associate ideas, and complete logical deductions. Piaget, basing his remarks on his observations of children's speech, says that children use connectives in speech before they grasp the structures of meaning which correspond to the syntactic forms they are using. Vygotsky (1962: 126-127) reinforces this conclusion. Oral language is developed through imitation. The child though he uses the words of adults does not necessarily use them in exactly the same way, bearing the same connotations. This could be true, as well, of the meaning he attaches to connectives he meets in his reading.

Loban (1963) reported that in their oral language children's use of subordinating connectives increased with chronological age, mental ability, language ability, and socio-economic status.

Ruddell's findings (1965) corroborate those of Loban; however, in Ruddell's study sex was not found to be an important contributing factor.

The results of Strickland's study (1962) with elementary school children indicated that factors of intelligence, mental age, occupational status, and the parents' educational backgrounds influenced the children's use of subordinate language patterns.

Robertson's recent study (1966) identified several problem

areas in pupils' understanding of connectives. The findings showed that sex, mental age, listening ability, reading ability, and ability in written language were important variables contributing to pupils' understanding of connectives in reading. She mentioned the apparent developmental lag in language the boys in grades four and five have as evidenced by their performance on the tests she administered.

The study also revealed an upward trend by grade in pupils' reading understanding of connectives from grades four to six. Expressed in percentages, the level of understanding in grade four was 57 per cent, in grade five, 66 per cent, and in grade six, 75 per cent.

Further analysis showed that high achievers showed greater growth in understanding of connectives between grades four and five. Growth for pupils in the lower group was greater between grades five and six. In addition, significant variation in pupils' understanding of connectives within each grade was noted.

Informal analysis of the pattern of errors suggested that there was an increasing semantic awareness of the connectives with each successive grade.

The sentence linkers and those connectives having multiplicity of meaning and function seemed to contribute to the comprehension difficulty most significantly. Those embedded in clause constructions of greater length than that found in children's speech patterns caused special problems as well.

The level of comprehension generally recommended for effective reading understanding on an instructional level is set by Smith (1963)

and Austin (1961) at 70 to 75 per cent and by Spache (1964) at 60 per cent. Robertson's study showed that pupils' understanding level of connectives is below what it should realistically be. Her study concerned material in basal reader series.

An independent reading level should be much higher. Betts (1946) recommends 90 to 100 per cent. It would appear, therefore, on the basis of these facts, that in their leisure-time reading and use of reference materials in social studies, pupils' comprehension level may fall short of that which is required for them to obtain maximum benefit from the use of such material.

VII. CHILDREN'S USE OF PERSONAL PRONOUNS

It is important for boys and girls to use pronouns correctly according to present usage standards. A working understanding of them orally and in writing will facilitate understanding of them in material they read. Furness (1965: 192) states that "correct pronoun usage is one sign of literacy." Jespersen (1933: 387) and Boyd (1914: 95-125) also speak of the importance of pronouns in speech and grammar. Young (1942: 125) says that pronouns are important indices of development.

There is a dearth of research on children's use of pronouns. One of the few is Young's study of seventy-four preschoolers enrolled in a university nursery school (1942). Samples of the children's use of pronouns were obtained from tapes recorded during their free play time outdoors and routine indoor activities. Pronouns constituted about 28 per cent of the comprehensible words spoken. An analysis of

these indicated that differences between sexes and between those of high and low socio-economic status were small. Increased frequency and variety of use accompanied increase in age.

First person singular pronouns, "I, me, myself," accounted for 39 per cent of the pronouns used. Those referring to others, including "it," constituted 50 per cent of the total used. Pronouns involving the second and third person totalled 12 to 16 per cent. Although the children were surrounded by companions and were in a play situation, they rarely used "we" or "us." Any increase noted was concomitant with age (30 months -- 2 per cent; 54 months -- 6.5 per cent). The use of "it" decreased with age but was compensated for by an increased use of "you, we, one, and he" indicating that the older children spoke less of objects and more about and to other persons. Boyd (1914) found this as well.

Occurrences of possessive forms of pronouns decreased with age (30 months -- 17 per cent; 60 months -- 12 per cent) and girls used them more frequently than boys. Joint ownership indicated by "our," or "ours" was almost entirely absent. At no point did it surpass the .3 per cent level. Possessive "self" pronouns decreased with age (30 months -- 90 per cent; 60 months -- 71 per cent) but possessive "other" pronouns (his, hers, theirs) increased from 10 per cent to 29 per cent for these ages.

Pronouns can present readers with comprehension problems. Some of the personal pronouns do not make use of logical distinctions. For example, the one form "you" is both singular and plural; "we" may refer to "he and I, she and I, you and I, they and I"; "he, she,

it," third person singular pronouns, designate gender but their plural form "they" does not.

Furness (1965: 191-96) says that studies made of the speech and writing of school children showed that a large per cent of all errors in both elementary and secondary grades involved the use of pronouns. Kell (1950: 553-556) concurs. Greene (1950: 338) states that chief among the pronoun errors are those of faulty reference of the pronoun to its antecedent and lack of agreement between the two. Harap (1930: 442) lists the major types of pronouns errors. Among these are: subject pronouns not in the nominative case (John and me went), use of the wrong case after "than" in comparisons (He's taller than me), the use of "whom" for "who" and "who" for "whom," disagreement of pronouns with their antecedents, the use of "which" for "who," and lack of clear reference of pronouns to their antecedents (Mary told her friend that she was mistaken).

If pupils frequently make errors in using pronouns in their speech and writing, it is hypothesized that they will encounter problems in reading them in print written for them by adults. This study is investigating pupils' reading understanding of the connectives and personal pronouns present in randomly selected passages of social studies material.

VIII. SUMMARY

In social studies written material constructions involving the coordination and/or subordination of ideas occur with considerable frequency. Among the devices used to relate one idea with another

to denote sequence, cause and effect, and comparisons are connectives and personal pronouns. Other studies have indicated that pupils' understanding of connectives and connectives in conjunction with personal pronouns is a problem area. The present study is investigating elementary school children's reading understanding of these function words in social studies material. The variables of mental age, general reading ability, chronological age, sex, and grade placement, which the earlier studies have shown to be important contributing factors to reading understanding, are accounted for in the research design.

CHAPTER III

DESIGN OF THE STUDY

This chapter delineates the selection of the test sample, the testing instruments and the method of administering them, a review of the pilot study, a rationale for the cloze procedure and discusses the collection of data and the statistical procedures used to analyze the data.

I. THE TEST SAMPLE

The population consisted of all children attending regular classes in the Edmonton Separate School System in grades four, five, and six. New Canadians who were just learning to speak English were excluded.

From two schools 301 children of two classes at each grade level (four, five, and six) in each school comprised the test population. These schools were in middle-class socio-economic areas as designated by officials of the Edmonton Separate School Board.

The investigator obtained class lists for each of the grade four, five, and six classrooms in the two schools. There were two classes at each grade level in each school. Beginning with the grade four class lists, the investigator assigned all pupils a number ranging between 1 and 301. A table of random numbers was used to assign the pupils, by grade, to four test groups. Within each grade level pupils whose numbers corresponded to the first thirty-five to be selected constituted the group which wrote Cloze Test, Series A in

May. The second group of thirty-five to be so selected wrote Cloze Test, Series B in May. In June each of these two groups was tested on the cloze series not written in May.

Using the same random procedure, two control test groups consisting of twelve to sixteen pupils were chosen. One control group wrote only Cloze Test, Series A in May and in June; the second wrote only Cloze Test, Series B. Their inclusion in the study was an attempt to exert at least limited control over possible order or practice effects that may have been present because of the nature of the tests used and/or the manner of their administration. That is, improvement in scores may result from practice in completing the "fill-in-the-blanks" tests. Each series of tests, although there was some overlap, was testing a particular aspect of pupils' understanding of language structure. Cloze Test, Series A was designed as a test of pupils' reading comprehension of social studies material. Cloze Test, Series B was devised to test pupils' reading understanding of the connectives and personal pronouns contained in the identical passages. However, because Cloze Test, Series A was constructed by deleting every fifth word, connectives and personal pronouns were among the words deleted. Greater contextual information was supplied by the passages of Cloze Test, Series B. Therefore, it might be that those pupils who wrote this series first were able to obtain higher scores on the June tests of Cloze Test, Series A than those pupils who wrote Cloze Test, Series A in May. This will be explicated more fully in Chapter IV.

From the test population of 301 pupils a test sample of 248 pupils was obtained. There were eight testing periods in May and six

testing periods in June. A pupil's absence from any one of these fourteen periods resulted in his name being deleted from the test population. Only those pupils whose test data was complete were included in the test sample (Table I). The number of pupils comprising the two experimental groups were very nearly equal as were the numbers of boys and girls within each group. The two control groups were closely matched regarding numbers in the groups and the distribution of boys and girls within them.

TABLE I
PUPIL TEST SAMPLE

| PUPIL GROUPS | | | Number in Pupil Group (N=248) | SEX AND GRADE | | | | | | |
|----------------|---------------------------------|----------|---|---------------|------------|------------|------------|------------|------------|----|
| GROUP | Cloze Test Series written in | | | BOYS | | | GIRLS | | | |
| | MAY | JUNE | | Grade 4 | Grade 5 | Grade 6 | Grade 4 | Grade 5 | Grade 6 | |
| I Experimental | 1 | Series A | Series B | 92 | 16 | 17 | 16 | 14 | 17 | 12 |
| | | Series B | Series A | 94 | 15 | 16 | 14 | 17 | 15 | 17 |
| II Control | 3 | Series A | Series A | 29 | 5 | 3 | 5 | 7 | 7 | 2 |
| | | Series B | Series B | 33 | 5 | 5 | 6 | 6 | 6 | 5 |

II. INSTRUMENTATION

The following tests were administered to all pupils in the sample: Cooperative School and College Ability Tests, Level 5, Form 5A, henceforth referred to as SCAT; Sequential Tests of Educational Progress Reading Tests, Level 4, Form 4A, henceforth referred to as STEP; Cloze Test, Series A and Cloze Test, Series B. Explanations of the tests and the manner of their administration are given below.

Mental Ability Test. To assess pupils' mental ability SCAT, Level 5, Form 5A was administered to the entire population sample. Pupils' understanding of isolated sentences and their ability to associate the meanings of isolated words are tested in Parts I and III respectively. The quantitative score represents pupils' performance in numerical computation and ability to solve arithmetic word problems. A total test score is obtained by combining the totals of the verbal and quantitative sections.

In a review discussing the validity of SCAT, Green (1965: 453) states that a combined score can confidently be interpreted as a measure of general intelligence, the purpose for which it was used in this study. He further recommended its use with pupils of the age group involved in this investigation.

Reading Comprehension Test. General reading comprehension in this study has been defined in terms of the pupils' scores on STEP, Level 4, Form 4A. STEP tests pupils' comprehension of a variety of reading materials; fiction, poetry, plays, letters, directions for doing something, articles of opinions, explanations, and information.

Betts (1965: 809) affirms its reliability in adequately testing five major thinking abilities: a) recall of ideas, b) making of inferences, c) analyzing an author's motives, d) analyzing presentation and e) criticizing. The abilities to follow sequences, to recognize related facts, and to discern cause and effect relationships are tested also. The selections in the STEP tests cover a variety of subject matter. This factor and the proven reliability of the tests are the reasons for its use as a measure of general reading comprehension in this study.

Cloze Tests. Two series of pre-cloze tests designed to measure children's reading comprehension of social studies material were prepared and administered to the population sample. Each series, Cloze Test, Series A and Cloze Test, Series B, contained six passages, the content of which was identical from series to series.

Procedure for Obtaining the Passages. The passages for the cloze tests were selected at random from authorized supplementary reading materials listed in the "primary references" section of the Enterprise Activities Catalogue issued by the School-Book Branch of the Department of Education, Province of Alberta.

Numbers were assigned to each of the books in this list. With reference to a table of random numbers, two books were chosen for each of the three grade levels. The following are the texts that were selected:

Grade 4 Raman, T.A. India. Grand Rapids, Michigan: The Fideler Company, 1962, p. 150-153.

Around Our World, A Study of Communities. D.L. Massey (General Editor), Toronto: Ginn and Company, 1965, p. 172

Grade 5 Smith, J. Russell and F.E. Sorenson. Neighbours in the Americas. Toronto: The John C. Winston Company, 1957, p. 304-305.

Tanser, H.A. and G.H. Dobrindt. Exploring the World. Toronto: Longmans, Green and Company, 1955, p. 56-57.

Grade 6 Cameron, Alex A. et al. Living in Canada. Toronto: Clarke, Irwin and Company Limited, 1958, p. 291.

Taylor, G. et al. Canada and Her Neighbours. Toronto: Ginn and Company, 1958, p. 126

Each passage was taken from the first page number to appear in the table of random numbers. Beginning with the first paragraph on each page thus chosen, selection was made of a passage of 254 to 284 words from which a minimum of thirty deletions of connectives and personal pronouns could be obtained.

Cloze Tests, Series A. These tests were devised by systematically deleting every fifth word beginning with the sixth word in the first sentence of each passage.

Cloze Test, Series B. These tests were constructed by deleting only connectives and personal pronouns in the same material used in Cloze Test, Series A. In instances in which a connective and personal pronoun came together with no intervening word the first word to occur was deleted.

Vocabulary Control. The investigator used The Teacher's Word Book of 30,000 Words (1944) to check the vocabulary level of the words in the six passages. Words in this list marked with an AA, A or numbers from fourteen upward are considered within the reading vocabulary of pupils in grades four, five, and six. Words in the passages numbered lower than fourteen were deleted and another word appropriate to the context and within the acceptable difficulty range was substituted. Substitutions were chosen from the Thorndike

Barnhart Junior Dictionary (1962); however, if no synonym was given here, Roget's Thesaurus of English Words and Phrases (1936) provided one.

In four instances substitution was not possible. For example, the word "explorer" had a rating of ten. Possible substitutes such as "voyager" and "adventurer" could not be used as they had ratings of two and six respectively. In such cases, the original word was left in the passage.

Scoring. Three measures were obtained from the SCAT tests; verbal, non-verbal, and total scores. The STEP tests yielded one score, the total number right.

The number of cloze responses for each cloze test in Cloze Test, Series A varied because the number of words in the six passages ranged from 254 to 284 words. In this series every fifth word was deleted. In Cloze Test, Series B the number of items deleted depended on the frequency with which the connectives and personal pronouns occurred in the passage. For the tests of both series the score was the total number of correct cloze responses on each test.

For both test series the insertion of the exact word deleted was credited. However, five exceptions to this rule were permitted.

1. Two substitutions for place and persons names were allowed. For example in test 5, item 19 (Appendix A), the word deleted was "Boston." Because the story dealt with trade between the United States and lands to the south of it, names of other American port cities such as "New York" and "Los Angeles" were accepted as correct.

Similarly, in test 11, item 12 (Appendix A), a man's first

name, "Henry," was omitted with only his surname given. Full first names such as "David" or "Thomas" or titles such as "Lord" or "Sir" were accepted; however, abbreviated names such as "Dave" or "Joe" were considered unacceptable as they were not suited to the formal writing style of the passage.

2. Cloze item 24, test 3, (Appendix A) required the insertion of a number referring to the length of a piece of material used by the natives of India as an article of apparel called a "dhoti." The dhoti was said to be four feet long. Many uses for the dhoti were mentioned among which were its uses as a mat, towel, and turban. Thus a range of numbers, between and including two to six, was considered a correct answer.

3. The word deleted for item 48, test 3 (Appendix A) was "panchayat," a term peculiar to India. The substitutions "meeting" or "court" were accepted as correct.

4. Pupils were told that each of the blanks required only a one-word answer. This was true with one exception. The connecting phrase, "for this reason," was deleted in test 6, item 10 (Appendix B). Suitable one-word substitutes such as "consequently," "so," and "thus," were credited.

The cloze tests were scored by the investigator and an assistant, a fourth-year university student in the Faculty of Education. The investigator made a random check for thoroughness and accuracy on the papers marked by the assistant.

Although a quantitative score is essential in ascertaining the pupils' reading understanding of connectives and personal pronouns

in social studies reading material, a study of the types of errors the pupils made was considered an important facet of the investigation as well. Such analysis proposed to determine if a particular kind of connective, for example, coordinate, subordinate, or causal connectives, or position in the sentence or paragraph affect pupils' understanding of the passage. Only by making a qualitative study of how the pupils' responses differed from the text from which the passages were taken could the areas in which their understanding lacks strength and in which they need reinforcement be identified. Thus a record of the pupils' answers to the items of Cloze Test, Series B was kept. The results are reported in Chapter V.

III. PILOT STUDY

At the end of March, 1967, a pilot study was conducted in one grade-five classroom in a school of middle class socio-economic status. The purpose of the preliminary study was to determine the feasibility of using the cloze procedure with children of this age group, to determine the approximate length of time needed to complete one cloze test, and to have some evidence of the questions children might raise when confronted with such tests.

The pilot-study results indicated that this procedure was feasible to use with pupils in the middle elementary grades. The length of the tests was reduced to a range of 254 to 284 words as the original tests had required too long a time to complete, especially by the less able pupils. The writing of the tests was scheduled for a period of four consecutive days in May and three consecutive days

in June; one test to be written each morning and one each afternoon in an approximate forty-five minute time allotment. The results of the pilot study showed it would be advisable to stress in the directions that the entire passage be read before beginning to write responses and that only ONE word was required in each space. Sample sentences were included on the sheet of directions and were to be completed with the class before testing began (Appendix A).

IV. RATIONALE OF THE CLOZE PROCEDURE

"... The reading difficulty of written material is usually defined by the amount of comprehension with which it is read" (Bormuth, 1962: 1). The fact that cloze tests are reliable measures of reading comprehension is shown by the studies of Taylor (1953), Louthan (1965), Bormuth (1962, 1964, 1966, 1967), and Jenkinson (1957).

The cloze procedure, developed by Taylor in 1953, is based on the principle that the interaction of all semantical, grammatical, and stylistic characteristics of a message will effect the degree of redundancy (that is, the predictability) of a message (Rankin, 1959).

Initially, a child learns language patterns through imitation which is largely a stimulus-response process. Through repetition the stimulus elicits the correct response. A stimulus frequently acting on an organism results in the firing of what Osgood (1964) calls central neural correlates established by the frequency with which grammatical redundancies have been heard and produced. This sets up in the nervous system predictive integrations that match

the structure of the language. Decoding and encoding processes are facilitated the closer the language user's nervous system approximates the inherent structural restrictions of the language.

Consider the example, "John and Bill are outstanding football players. _____ are excellent students as well." The pronoun "he" might be considered a possible insert except for the restriction imposed by the plural verb "are" and the compound subject, the antecedent, in the previous sentence. The plural pronoun "we" which would satisfy the number requirement does not adequately represent the antecedent "John and Bill." Only the word "they" satisfies all the requirements. "Any sort of restriction on occurrences is equivalent to redundancy. Grammar consists of restrictions on possible structures. It must, therefore, produce redundancy" (Gleason, 1965: 458).

Research has determined the deletion frequency which, in a cloze procedure, can be used most effectively to estimate redundancy. Testing procedures have been conducted by Rankin (1959) and Taylor (1957) to determine the effect of various frequencies of deletions on intelligibility of reading material so mutilated. Their research showed that the deletion of every fifth word was the best comparable measure of reading comprehension to that afforded by use of multiple-choice standardized comprehension tests and has been the frequency of deletion used in this study. Testing also showed no significant difference in reliability between tests in which synonyms were accepted and those in which they were not credited. Therefore, to make the most economical use of time, only the exact deleted word was

accepted as a correct response.

In the cloze procedure context is used. The meanings of individual words must be fused together before the reader can insert the required word. Whereas the traditional question-answer check of comprehension depended partially on the pupils' ability to understand and interpret the questions, in this procedure the pupils' performance depends on the extent to which they understand the meaning of the passage. The understanding gained by the person in the on-going reading process may differ from the understanding which ensues when the reader is guided and cued by questions. Thus, the scores on the cloze tests tend to indicate reading comprehension as well as knowledge of vocabulary and general language ability.

In her study Jenkinson (1957) stated that the cloze procedure is positively related to comprehension in reading as measured by standardized tests; that is, it is a valid procedure for assessing reading comprehension. Correlation coefficients between cloze and standardized reading test scores were almost as high as some reliability measures given for a single standardized test. Rankin (1965), Ruddell (1963), and Weaver (1963) concur in this finding.

Cloze tests measure reading comprehension. "When a passage is written some stimulus elicits a set of mediating responses in the author . . . The accuracy of comprehension depends upon the correspondence of the sets of mediating responses in the author and the reader" (Bormuth, 1962: 14).

V. COLLECTION OF THE DATA

All tests were administered by the regular teachers in the classrooms involved in the study. In an attempt to control the teacher variable factor, the investigator conducted a briefing session to acquaint the pupils, by grade, with the cloze procedure. A transparency of a sample cloze test was made and an overhead projector was used to ensure that all pupils could clearly see the sample passage. The directions to be used in the testing sessions were also shown, read aloud, and clarified whenever necessary. The investigator printed in the responses suggested by the pupils in the class. Class discussions followed to explain whether or not the suggested answers were correct. The investigator stressed the importance of pre-reading the entire passage before writing in the answers.

Meetings were held with the teachers to clarify testing procedures and to answer questions they may have had regarding the testing schedule or manner of administration.

Data regarding chronological age, sex, and grade placement were obtained from the official class records made available to the investigator by the Edmonton Separate School Board office.

The SCAT, STEP and cloze tests were administered at the beginning of the third week in May. Cloze Test, Series A and Cloze Test, Series B were administered to groups at each grade level during the last two weeks in June according to the test schedule. The pupils in the control groups wrote identical tests in the two testing periods, half of them writing only Cloze Test, Series A, half of

them writing only Cloze Test, Series B.

VI. TREATMENT OF THE DATA

The answers to the SCAT and STEP tests were recorded by the pupils on separate answer sheets and were scored by the IBM Optical Mark Reader. The cloze tests were handscored.

To test Hypothesis I a two-way analysis of variance was applied to test the significance of the effects of grade on pupils' reading comprehension scores on Cloze Test, Series A and their scores on Cloze Test, Series B.

To test Hypothesis II Pearson product-moment correlation coefficients between the scores on STEP Form 4A and Cloze Test, Series A and on STEP Form 4A and Cloze Test, Series B were calculated by grade.

To test Hypothesis III stepwise linear regression analysis was used to determine how well each of the variables of mental ability, general reading comprehension, chronological age, sex, and grade placement predicted the total scores on Cloze Test, Series A and the total scores on Cloze Test, Series B.

VII. SUMMARY

In summary, a test sample of 248 children in grades four, five, and six was chosen from two schools in middle socio-economic class areas within the Edmonton Separate School System.

Each pupil in the test sample was given SCAT and STEP tests. Two series of pre-cloze tests, Cloze Test, Series A and Cloze Test

Series B, each containing identical material but having different deletion patterns were administered to the entire test sample as well.

Pupils were sub-divided into four groups.

Groups 1 and 2 were experimental groups.

Group 1 wrote Cloze Test, Series A in May; Cloze Test, Series B in June.

Group 2 wrote Cloze Test, Series B in May; Cloze Test, Series A in June.

Groups 3 and 4 were control groups.

Group 3 wrote Cloze Test, Series A in May; Cloze Test Series A in June.

Group 4 wrote Cloze Test, Series B in May; Cloze Test Series B in June.

A pilot study conducted in March, 1967 identified possible problem areas relating to the length and administering of the tests and was helpful in refining the testing instruments used.

The chapter has also presented a rationale for using the cloze procedure and has outlined the statistical treatment of the data collected.

CHAPTER IV

FINDINGS OF THE STUDY

This chapter will examine the data obtained from two schools of the Edmonton Separate School System involving grade four, five, and six pupils who were in attendance during the testing sessions in May and June, 1967.

The results of the statistical treatment will be presented in the following order :

- I Restriction of the use of the scores of pupils in the test sample
- II Comparison of the pupil groups on the predictor variables and on their mean scores on Cloze Test, Series A and on Cloze Test, Series B.
- III Difference between pupils' comprehension in reading Cloze Test, Series A and Cloze Test, Series B as revealed by two-way analysis of variance.
- IV Relationships between general reading comprehension and comprehension on Cloze Test, Series A and Cloze Test, Series B as shown by Pearson product-moment correlations.
- V Influence of mental ability, general reading comprehension, chronological age, sex, and grade placement on pupils' scores on Cloze Test, Series A and Cloze Test, Series B as revealed by stepwise linear regression analysis.

I. RESTRICTION OF THE USE OF THE SCORES OF PUPILS IN THE TEST SAMPLE

Table II shows the order in which Cloze Test, Series A and Cloze Test, Series B were administered to the pupils in the population sample of 301 pupils tested in this investigation. There was a one-month time lapse between the May and June testings. As a result of pupil absences during testing a test sample of 248 pupils was obtained.

Multiple linear regression analysis was the statistical technique used to determine whether or not the order in which the tests were written exerted a significant influence on the comprehension of the 248 pupils on the cloze tests of both series. In the present study, this technique investigated the relationship between a set of independent or predictor variables (grade placement and group membership) and a dependent or criterion variable (total scores on Cloze Test, Series A or total scores on Cloze Test, Series B). It sought to clarify whether or not a critical variable (the order in which the tests were written) when added to a linear expression significantly reduced the criterion error sum of squares.

TABLE II

ORDER IN WHICH CLOZE TEST, SERIES A AND CLOZE TEST
SERIES B WERE ADMINISTERED TO THE
POPULATION SAMPLE (N = 301)

| Pupil Group | Number in Pupil Group | Cloze Test Series Given In | |
|-------------|-----------------------|----------------------------|----------|
| | | May | June |
| 1 ——— X | 105 | Series A | Series B |
| 2 ——— | 105 | Series B | Series A |
| 3 ——— Y | 44 | Series A | Series A |
| 4 ——— | 47 | Series B | Series B |

A comparison between full and restricted models was made. The full model for the present problem consisted of an equation containing group membership (determined by the order in which the

pupils wrote the cloze series) and grade placement as predictors of pupils' total scores on Cloze Test, Series A. A criterion error sum of squares was calculated. The restricted model consisted of grade placement alone as the predictor of total scores on Cloze Test, Series A. From the restricted model a squared multiple correlation (error sum of squares) which was less than or equal to the error sum of squares of the full model was calculated. The significance of the contribution made by group membership (order) in the presence of grade placement was tested by the calculation of an F ratio. A significant F ratio was recorded ($p < .001$).

The same analysis was applied with total scores on Cloze Test, Series B as the criterion variable. A significant F ratio was recorded ($p < .01$).

The analysis showed that the order variable was contributing significantly to pupils' comprehension scores on the cloze tests of both series; therefore, the data used to test the hypotheses of the study were restricted for Cloze Test, Series A to the scores of those pupils (groups 1 and 3) who wrote these tests in May and for Cloze Test, Series B to the scores of those pupils (groups 2 and 4) who wrote these tests in May. The scores of group 1 for Cloze Test, Series B and the scores of group 2 for Cloze Test, Series A were deleted.

Henceforth, the results will be given for two groups which each originally comprised two smaller groups (Table II). The first group consisting of pupils in groups 1 and 3 (Cloze Test, Series A, May) shall be known as group X and the second group consisting

of pupils in groups 2 and 4 (Cloze Test, Series B, May) shall be known as group Y. These two pupil groups, group X and group Y, comprise the test sample.

II. COMPARISON OF THE PUPIL GROUPS ON THE PREDICTOR VARIABLES
AND ON THEIR SCORES ON CLOZE TEST, SERIES A
AND ON CLOZE TEST, SERIES B.

Comparisons were made for the two distinct sets of pupils regrouped as explained above. As they were selected by a random sampling procedure, it was assumed that the two groups, X and Y, would be comparable with respect to the predictor variables of mental ability, general reading comprehension, chronological age, sex, and grade placement.

Table III presents the means and standard deviations of the two groups, X and Y, for the five predictor variables.

For each of the predictor variables the two groups were very comparable. No appreciable differences were evident on either SCAT or STEP. The mean age of the pupils in group X and group Y was ten years, six months. There was an even distribution of girls and boys in both pupil groups. As the test sample was comprised of pupils registered in grades four, five, and six, it would be expected that the mean grade placement level would be approximately grade five as the table indicates.

Table IV shows that the performance of pupils in group Y on Cloze Test, Series B in terms of the percentage of test items correct was consistently better than the performance of pupils in group X on Cloze Test, Series A.

TABLE III

MEANS AND STANDARD DEVIATIONS OF THE TWO PUPIL GROUPS IN THE TEST
SAMPLE FOR MENTAL ABILITY, GENERAL READING COMPREHENSION,
CHRONOLOGICAL AGE, SEX, AND GRADE PLACEMENT

| Variables | Total Possible Score | Group X N = 121 | | Group Y N = 127 | |
|---|----------------------------|--------------------|-------|--------------------|-------|
| | | Mean | S.D. | Mean | S.D. |
| Mental Ability (<u>SCAT</u> verbal) | 50 | 37.36 | 8.44 | 37.79 | 7.94 |
| Mental Ability (<u>SCAT</u> non-verbal) | 50 | 33.12 | 9.44 | 32.39 | 9.90 |
| Mental Ability (<u>SCAT</u> total) | 100 | 70.45 | 16.57 | 70.15 | 16.01 |
| General Reading Comprehension (<u>STEP</u>) | 70 | 51.09 | 12.02 | 51.46 | 11.13 |
| Chronological Age | | 126.68 | 12.40 | 127.12 | 11.52 |
| Sex | | .49 | .49 | .51 | .49 |
| Grade Placement | | 4.94 | .79 | 4.99 | .81 |

TABLE IV

MEANS AND STANDARD DEVIATIONS FOR PUPILS' TOTAL SCORES
ON CLOZE TEST, SERIES A AND ON CLOZE TEST, SERIES B
BY GRADE LEVEL OF READING PASSAGE

| GROUP X CLOZE TEST, SERIES A N = 121 | | | | | | GROUP Y CLOZE TEST, SERIES B N = 127 | | | | | |
|--|-----------------------|----------------------|--------------------|----------------------|------|--|-----------------------|----------------------|--------------------|----------------------|------|
| Grade Level of Reading Passage | Identification number | PUPILS' TEST SCORES | | | S.D. | Grade Level of Reading Passage | Identification number | PUPILS' TEST SCORES | | | S.D. |
| | | Total Possible Score | Pupils' Mean Score | % Test Items Correct | | | | Total Possible Score | Pupils' Mean Score | % Test Items Correct | |
| 4 | 1 | 56 | 20.12 | 33 | 5.99 | 4 | 2 | 31 | 13.88 | 44 | 5.00 |
| | 3 | 50 | 20.09 | 41 | 6.39 | | 4 | 37 | 19.62 | 53 | 5.46 |
| | 5 | 53 | 19.62 | 37 | 7.08 | | 6 | 34 | 16.80 | 49 | 5.19 |
| 5 | 7 | 52 | 21.65 | 42 | 6.15 | 5 | 8 | 43 | 21.87 | 51 | 6.56 |
| | 9 | 54 | 23.22 | 43 | 7.30 | | 10 | 34 | 16.76 | 49 | 5.20 |
| 6 | 11 | 58 | 25.58 | 44 | 7.27 | 6 | 12 | 34 | 16.44 | 48 | 4.91 |

Cloze Test, Series A was devised by deleting every fifth word in the passage. Cloze Test, Series B was constructed by leaving blank spaces for connectives and personal pronouns only in the identical passages. It would appear that the students had more difficulty in completing the cloze items of Cloze Test, Series A in which a wider variety of word forms had been deleted. This finding is consistent with that of Bloomer (1966) and Taylor (1957) who, by devising various cloze tests over passages of identical content, sought to determine which type of deletions (any word, conjunctions, pronouns, nouns, verbs, adverbs) would make passages more difficult to comprehend. They determined that pupils found most difficult those tests having random any-word deletions and deletions of nouns and verbs, words which supply the greatest amount of information.

On the other hand, deletions from the passages of Cloze Test, Series B consisted of connectives and personal pronouns. Although connectives, in themselves, supply little information, as function words they serve to join together word units of high information and thus understanding of them is important for the reader. The problem of comprehension of the passages in this series was compounded by the deletion of personal pronouns which, as noun substitutes, bear the burden of passing forward the thoughts represented by these high-information words.

Thus, the superior performance by the pupils in group Y on Cloze Test, Series B as compared to the performance by pupils in group X on Cloze Test, Series A cannot simply be reduced to a comparison of the ability to comprehend low-information words versus

the ability to comprehend high-information words, for it is probable that within Cloze Test, Series B or Cloze Test Series A lie special reading problems. Further analyses, presented in sections III, IV, and V showed that problems do exist. A study of pupils' performance on these two cloze test series may supply some clues as to why pupils find it difficult to read social studies material.

Bormuth's (1967) research resulted in his devising comparable cloze and multiple-choice comprehension test scores. That is, he derived a table which shows for each of several cloze test scores the score that a subject is most likely to receive on a multiple-choice test over the same passage. For example, 38 per cent on a cloze test approximates 67 per cent on a multiple-choice test. With reference to Bormuth's table comparable multiple-choice scores of 73 per cent to 93 per cent are equivalent to the 44 per cent to 53 per cent rankings shown for group Y's performance on Cloze Test, Series B. This is well below the level of comprehension recommended for independent reading. Betts (1946) has defined the independent reading level as one at which reading is fluent and 90 per cent comprehension is achieved. Such ease is necessary if the pupil is to be able to do the thinking that is required for a full understanding of what he is reading.

Robertson (1966) used a multiple-choice test to check pupils' comprehension of connectives contained in passages patterned on those found in basal reader series. The findings indicated that comprehension of connectives was a problem to readers in grades four to six. Her findings showed that mean percentages for each of the three grades, four, five, and six, were 57 per cent, 65 per cent and 74 per cent

respectively.

The present study suggests that the comprehension problem apparently encountered in reading social studies material may be compounded by the need to understand the connectives and personal pronouns in such material. These problems are further investigated and the results recorded in sections III, IV, and V of this chapter.

III. DIFFERENCES BETWEEN PUPILS' COMPREHENSION IN READING CLOZE TEST, SERIES A AND CLOZE TEST, SERIES B

Hypothesis I states that there is no significant difference by grade between pupils' comprehension in reading social studies material in Cloze Test, Series A and their comprehension in reading this same material as tested by Cloze Test, Series B.

A two-way analysis of variance was applied to test the significance of the effects of grade of pupil and cloze test series written on pupils' reading comprehension scores on Cloze Test, Series A and Cloze Test, Series B. This was calculated for each grade level of the test passages (four, five, and six) and for the total scores of both cloze series. The analysis of variance also tested for the presence of interaction in the data.

The model used was that of a two by three factorial experiment involving two fixed variables. The first fixed variable was the two cloze test series. The second fixed variable was the three grade levels of reading passages. A schematic representation of this model is seen below.

| Cloze Series | Grade Level of Pupils Reading the Cloze Series | Grade Level of the Reading Passages of the Cloze Series | | |
|-----------------------------|--|---|---------|---------|
| | | Grade 4 | Grade 5 | Grade 6 |
| <u>Cloze Test, Series A</u> | 4 | 4,4 | 4,5 | 4,6 |
| | 5 | 5,4 | 5,5 | 5,6 |
| | 6 | 6,4 | 6,5 | 6,6 |
| <u>Cloze Test, Series B</u> | 4 | 4,4 | 4,5 | 4,6 |
| | 5 | 5,4 | 5,5 | 5,6 |
| | 6 | 6,4 | 6,5 | 6,6 |

(The designation, (4,4), indicates grade four pupils' mean comprehension score on a cloze test the material of which had been taken from a source recommended for the use of grade four pupils).

The data used were the mean scores on the tests of the two cloze series by the pupils in each of the three grade levels (four, five, and six). Since unequal cell frequencies were obtained an unweighted means analysis was employed.

Results of Analysis of Pupils' Performance on Grade Four Reading Passages

Table V summarizes the computer output from the unweighted means analysis for grade four content.

A study of Tables V and VI shows that the performance on the cloze tests of both series improved significantly ($p < .001$) as the grade level of the pupils increased.

Multiple linear regression analysis was applied to determine whether or not there was a developmental trend in pupils' comprehension;

TABLE V

SUMMARY ANALYSIS OF VARIANCE FOR
GRADE FOUR READING PASSAGES

| N = 248 | | | | | |
|---|----------------|------|-------------|--------|--------------|
| Source of Variation | Sum of Squares | d.f. | Mean Square | F | Significance |
| Grade of pupil | 0.5804 | 2 | 0.2902 | 21.786 | S** |
| Cloze series written | 0.1255 | 1 | 0.1255 | 9.423 | S** |
| Interaction between grade of pupil and cloze series written | 0.2910 | 2 | 0.1455 | 0.109 | N.S. |
| Within cell error | 0.3223 | 242 | 0.1332 | | |

** (p < .001)

TABLE VI

CELL MEANS FOR GRADE FOUR READING PASSAGES

| Grade of Pupil | Number in Pupil Group X | Cell Means Cloze Test, Series A | Number in Pupil Group Y | Cell Means Cloze Test, Series B |
|----------------|-------------------------|---------------------------------|-------------------------|---------------------------------|
| 4 | 42 | .31 | 43 | .36 |
| 5 | 44 | .39 | 42 | .43 |
| 6 | 35 | .43 | 42 | .47 |

that is, to determine if there was an increase in pupils' scores from grades four to five and from grades five to six. The F ratio calculated was significant showing that comprehension increased at each successive grade level.

A second finding was that the performance on Cloze Test, Series B (grade four passages) for the pupils in each grade was significantly better ($p < .001$) than on Cloze Test, Series A (grade four passages).

Therefore, hypothesis I, as it relates to grade four passages, was rejected.

On grade four passages pupils had more difficulty answering cloze items requiring greater numbers of information words (Cloze Test, Series A) than they had supplying cloze items with the deleted connective or personal pronoun (Cloze Test, Series B). There are fewer connectives contained in the grade four passages than on grade five and six passages (Table XXI, Chapter V) so that more emphasis was placed on lexical meaning than on associating ideas.

Results of Analysis of Pupils' Performance on Grade Five Reading Passages.

Table VII summarizes the computer output from the unweighted means analysis for grade five stories.

A study on tables VII and VIII shows that the performance on grade five passages significantly improved as pupils' grade level increased. The scores of the grade six pupils were significantly better than the scores of the grade four pupils on these grade five passages ($p < .001$).

TABLE VII
SUMMARY ANALYSIS OF VARIANCE FOR
GRADE FIVE READING PASSAGES

| N = 248 | | | | | |
|---------------------|----------------|------|-------------|--------|--------------|
| Source of Variation | Sum of Squares | d.f. | Mean Square | F | Significance |
| Grade of pupil | 0.6510 | 2 | 0.3255 | 26.464 | S** |
| Cloze series | 0.3292 | 1 | 0.3292 | 0.268 | N.S. |
| Interaction | 0.1654 | 2 | 0.8270 | 0.672 | N.S. |
| Within cell error | 0.2976 | 242 | 0.1230 | | |

** Significant at the .01 level

TABLE VIII
CELL MEANS FOR GRADE FIVE READING PASSAGES

| Grade of Pupil | Number in Pupil Group X | Cell Means <u>Cloze Test, Series A</u> | Number in Pupil Group Y | Cell Means <u>Cloze Test, Series B</u> |
|----------------|-------------------------|--|-------------------------|--|
| 4 | 42 | .36 | 43 | .37 |
| 5 | 44 | .45 | 42 | .44 |
| 6 | 35 | .48 | 42 | .51 |

Factor 1, cloze series written, did not significantly affect performance on grade five passages (p = .605). There was little appreciable difference between pupils' performance on Cloze Test,

Series A and Cloze Test, Series B by the pupils in each grade.

It would seem that there is a shift in difficulty from grade four to grade five passages. Pupils found the tests of both series equally difficult. The increase from thirty-eight connectives in grade four passages to fifty-one connectives in the grade five passages (Table XXI, Chapter V) would force greater attention to be paid to the associating of ideas in Cloze Test, Series B so that this series was now equally difficult as determining which information words were required as cloze responses in Cloze Test, Series A.

Some interaction was noted but not at a significant level (p = .512).

As it related to grade five passages, hypothesis I was accepted.

Results of Analysis of Pupils' Performance on Grade Six Reading Passages

Table IX summarizes the computer output from the unweighted means analysis for grade six passages.

TABLE IX
SUMMARY ANALYSIS OF VARIANCE FOR
GRADE SIX READING PASSAGES

| N = 248 | | | | | |
|---------------------|---------------|------|--------------|--------|--------------|
| Source of Variation | Sum of Square | d.f. | Mean Squares | F | Significance |
| Grade of pupils | 0.4399 | 2 | 0.2199 | 19.917 | S** |
| Cloze Series | 0.1518 | 1 | 0.1518 | 13.746 | S** |
| Interaction | 0.5859 | 2 | 0.2929 | 0.265 | N.S. |
| Within cell error | 0.2672 | 242 | 0.1104 | | |

** Significant at the .01 level

TABLE X
CELL MEANS FOR GRADE SIX READING PASSAGES

| Grade of pupil | Number in Pupil Group X | Cell Means <u>Cloze Test, Series A</u> | Number in Pupil Group Y | Cell Means <u>Cloze Test, Series B</u> |
|----------------|-------------------------|--|-------------------------|--|
| 4 | 42 | .33 | 43 | .28 |
| 5 | 44 | .41 | 42 | .35 |
| 6 | 35 | .43 | 42 | .39 |

A study of Tables IX and X shows that the main effects of both factor 1 (cloze series written) and factor 2 (grade of pupil) were significant for grade six test passages. The pupils of each grade achieved significantly better on Cloze Test, Series A than they did on Cloze Test, Series B ($p < .001$). The performance of pupils improved as grade increased ($p < .001$).

Hypothesis I, as it related to grade six passages, was rejected.

Results of Analysis of Pupils' Total Scores on Cloze Tests, Series A and on Cloze Test, Series B.

Table XI summarizes the computer output from the unweighted means analysis for total scores on Cloze Test, Series A and Cloze Test, Series B.

A study of Tables XI and XII shows that the main effects of factor 2 (grade of pupil) were significant ($p < .001$). As grade of pupil increased mean total scores improved.

Although Table XI shows that factor 1 (cloze series written)

TABLE XI

SUMMARY ANALYSIS OF VARIANCE FOR PUPILS' TOTAL SCORES
ON GRADES FOUR, FIVE, AND SIX READING PASSAGES

| N = 248 | | | | | |
|---------------------|----------------|------|--------------|--------|--------------|
| Source of Variation | Sum of Squares | d.f. | Mean Squares | F | Significance |
| Grade of pupil | 0.5501 | 2 | 0.2750 | 26.281 | S* |
| Cloze series | 0.1959 | 1 | 0.1959 | 0.002 | N.S. |
| Interaction | 0.6102 | 2 | 0.3051 | 0.292 | N.S. |
| Within cell error | 0.2533 | 242 | 0.1046 | | |

* Significant at the .001 level

TABLE XII

CELL MEANS FOR PUPILS' TOTAL SCORES ON GRADES FOUR, FIVE,
AND SIX READING PASSAGES

| Grade of Pupil | Number in Pupil Group X | Cell Means <u>Cloze Test, Series A</u> | Number in Pupil Group Y | Cell Means <u>Cloze Test, Series B</u> |
|----------------|-------------------------|--|-------------------------|--|
| 4 | 42 | .34 | 43 | .34 |
| 5 | 44 | .42 | 42 | .40 |
| 6 | 35 | .45 | 42 | .46 |

did not significantly influence pupils' total mean scores, there were differences in their performance on Cloze Test, Series A as compared with their performance on Cloze Test, Series B when the grade level of reading passage was considered.

A close study of Tables VI, VIII, and X shows that for both cloze series, A and B, there was an improvement in pupils' scores, at the three grade levels, from grade four passages to grade five passages. On grade four passages pupils' performance on Cloze Test, Series B surpassed their performance on Cloze Test, Series A. This was true but to a lesser extent on grade five passages. At this level the pupils' performance on the two series was nearly equal. Although there was a decrease in performance on the grade six passages of both series, the pupils' comprehension on Cloze Test, Series A surpassed their comprehension on Cloze Test, Series B, an opposite situation to the one found for passages designated as grade four content. A schematic representation of this may be found below.

| Cloze Series | Grade Level of Pupils Reading the Cloze Series | Grade Level of the Reading Passages of the Cloze Series | | |
|-----------------------------|--|---|-------------------|---------|
| | | Grade 4 | Grade 5 | Grade 6 |
| <u>Cloze Test, Series A</u> | 4 | | | |
| | 5 | HARDER | EQUALLY DIFFICULT | EASIER |
| | 6 | | | |
| <u>Cloze Test, Series B</u> | 4 | | | |
| | 5 | EASIER | EQUALLY DIFFICULT | HARDER |
| | 6 | | | |

In part, the shift in difficulty between Cloze Test, Series A and Cloze Test, Series B at the grade four and grade six levels of passages may be a function of the types of connectives and/or the

number of those types tested in these passages. A study of the frequency distribution of the connectives and personal pronouns in Cloze Test, Series B (Table XXI, Chapter V) shows that the number and variety of connectives did vary from grade four, to five, to six.

Grade four passages contained fewer relative pronouns than did grade six passages. Not only did they differ in number but they varied in type as well. Grade four passages contained four cloze items requiring the one relative pronoun "which." Grade six passages, on the other hand, contained eleven cloze items requiring four different relative pronouns -- "who," "whose," "what," and "that." Relative pronouns have a dual function; they are pronouns substituting for nouns and they are connectives associating independent and dependent clauses. While Davis (1944) has indicated that children use "which" less frequently in their own language than "who" or "that," it would seem that the number of relative pronouns in the grade six passages could have been a factor contributing to the pupils' problem in comprehending the reading passages in Cloze Test, Series B. However, no direct comparison can be made between pupils' understanding of "which" in grade four and grade six passages, for this relative pronoun did not occur in the grade six passages.

Just as there was a greater variety and number of relative pronouns, so, too, in the grade six passages, several "sentence linkers," not contained in grade four passages, were tested. These connectives, such as, "however," "later," and "finally" which are usually not used by children in their own language and which are found infrequently in the basal readers, were among the cloze items

in the 90 per cent error category.

Pupils' scores on Cloze Test, Series B were lower for sixth-grade passages than for fourth-grade passages. It is possible that this result may be accounted for by the fact that more personal pronouns occurred in grade four passages than in grade six passages. Pupils experience less difficulty understanding personal pronouns than understanding connectives which associate ideas in a variety of relationships. Although there were fewer personal pronouns in grade six passages, they contained more connectives than the grade four passages -- this may have made them more difficult to read with understanding. Then too, the possessive form of the personal pronouns, which the pupils found more difficult than the nominative and objective forms, appeared more frequently in the grade six passages than in the grade four passages. These facts may, in part, account for the lower scores on the grade six passages of Cloze Test, Series B.

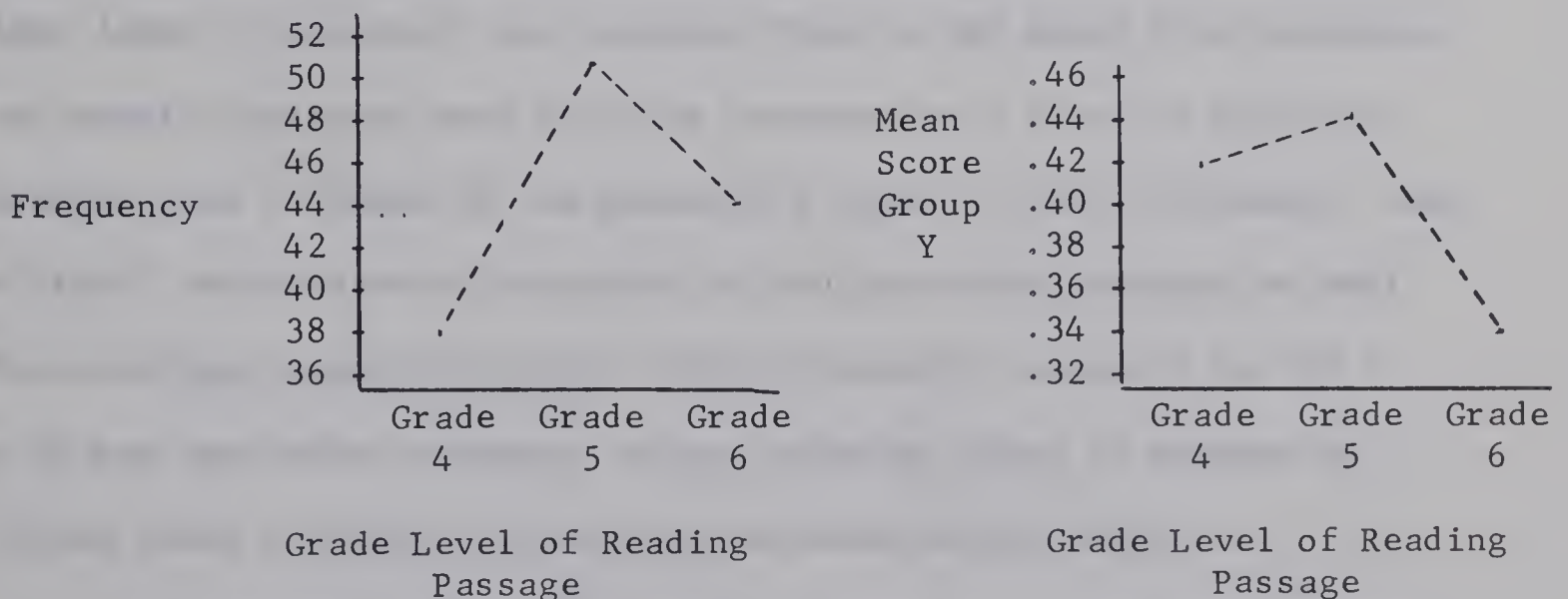


FIGURE I

COMPARISON BETWEEN FREQUENCY WITH WHICH CONNECTIVES OCCURRED IN GRADE FOUR, GRADE FIVE, AND GRADE SIX READING PASSAGES IN CLOZE TEST, SERIES B AND PUPILS' PERFORMANCE ON THESE PASSAGES

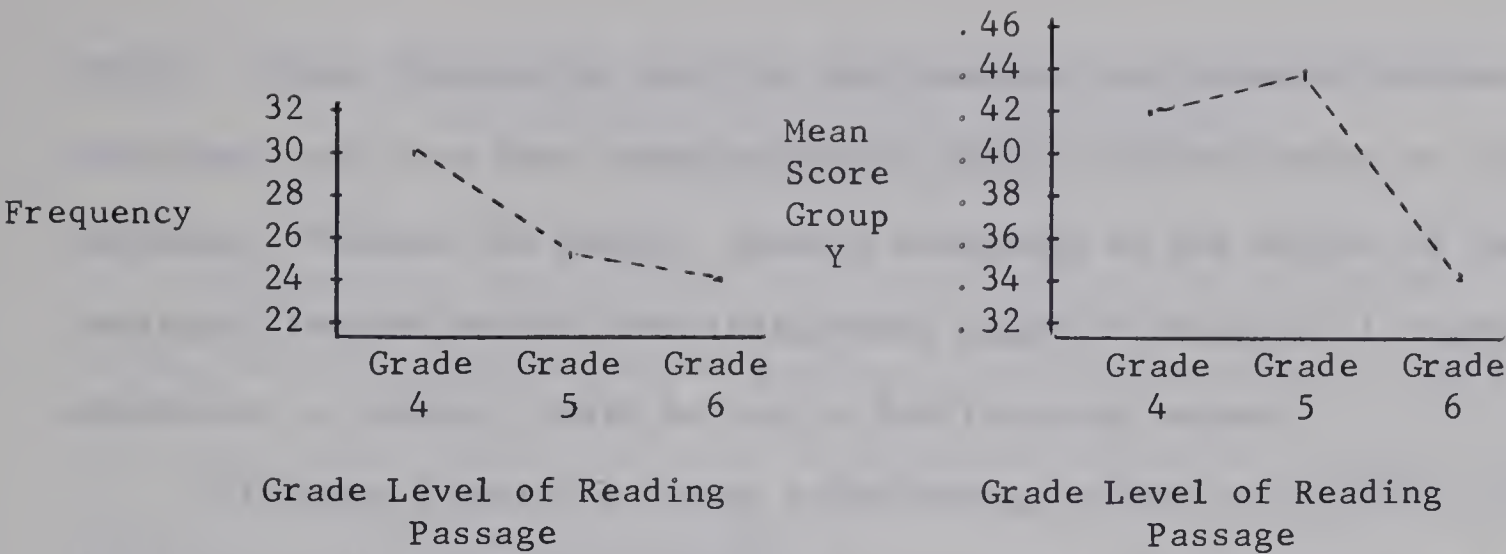


FIGURE II

COMPARISON BETWEEN FREQUENCY WITH WHICH PERSONAL PRONOUNS OCCURED IN GRADE FOUR, FIVE, AND SIX READING PASSAGES IN CLOZE TEST, SERIES B AND PUPILS' PERFORMANCE ON THESE PASSAGES

With respect to grade five passages, Figures I shows that, despite the occurrence of a greater number of connectives, pupils' performance was better than on either the grade four or the grade six passages. A comparison of the types of connectives contained in the passages at the two levels (five and six) might explain this result. More connectives within the 70 to 90 per cent error category were cloze items in the grade six passages than in the grade five passages. For example, twice as many relative pronouns were found in grade six passages than in those at the grade five level. Simple includers, such as "that" occurred more frequently in the grade six passages as well. The coordinate connective "and," which frequently appeared in the 1 to 30 per cent error category, occurs nineteen times as opposed to fifteen times in grade five and six passages respectively.

In addition, Tables VIII and X, show an increase in the pupils' performance on the grade five passages of both Cloze Test, Series A and Cloze Test, Series B. It would seem that the grade five passages were easier to comprehend than those at both the grade four and six

levels. Other factors, as well as the frequency and types of connective deletions, may have been contributing to pupils' higher scores on these passages. Perhaps the pupils' general knowledge on the topics of these passages, learned either from independent study or from social studies activities in school, could be such a facilitating factor.

Although a positive causal relationship cannot be inferred, it is a reasonable possibility that the occurrence of the connectives alone or of both connectives and personal pronouns together contributed to the pupils' reading comprehension problems on Cloze Test, Series B.

On the basis of the findings, hypothesis I, which stated that there is no significant difference by grade between pupils' comprehension in reading social studies material in Cloze Test, Series A and their comprehension in reading this same material as tested by Cloze Test, Series B, was rejected. The findings showed a developmental trend in pupils' comprehension of the material in Cloze Test, Series A and Cloze Test, Series B concomitant with increase in their grade placement. Grade six pupils did significantly better than the grade four pupils on the tests of both cloze series regardless of the grade designation of the reading passages. On grade four passages the pupils achieved higher scores on Cloze Test, Series B than on Cloze Test, Series A. The reverse was true for grade six passages; pupils' achievement on Cloze Test, Series A surpassed their performance on Cloze Test, Series B. No appreciable difference was noted between pupils' performance on the two cloze series with respect to grade five reading passages.

IV. RELATIONSHIP BETWEEN GENERAL READING COMPREHENSION
AND COMPREHENSION ON CLOZE TEST, SERIES A
AND CLOZE TEST, SERIES B

Hypothesis II states that there is no significant correlation by grade between pupils' general reading comprehension scores on STEP Form 4A and their comprehension in reading social studies on Cloze Test, Series A and on Cloze Test, Series B.

To test this hypothesis Pearson product-moment correlation coefficients between the scores on STEP and Cloze Test, Series A and between STEP and Cloze Test, Series B were calculated. The analysis was carried out for each grade level of pupils in the test sample at each grade level of reading passages.

Taylor (1953), Bormuth (1962, 1963, 1964), Rankin (1957, 1959), Jenkinson (1957), and Hafner (1963) have shown that the cloze procedure is a valid tool for measuring reading comprehension and determining the difficulty level of reading passages. Correlations between cloze tests and standardized reading tests obtained in the many studies cited above have established the concurrent validity of cloze tests as measures of general reading comprehension. The correlations ranged from .29 (Rankin, 1959) to .84 (Bormuth, 1962) using any-word deletion cloze tests.

Bormuth (1964) has shown that cloze tests are usable in grades four to six to predict scores on tests measuring a variety of types of reading comprehension, among which was pupils' understanding of relationships in social studies material.

In the present investigation, Cloze Test, Series A was an

any-word deletion test as every fifth word was randomly deleted from each passage. The series was used as a test of pupils' reading comprehension of social studies material at three grade levels, four, five, and six. Correlations between pupils' general reading comprehension (STEP) and their comprehension in reading social studies material were calculated.

Relationship Between Pupils' Comprehension On STEP and on Cloze Test, Series A

Table XIII presents the correlations between STEP and Cloze Test, Series A.

The correlations were highest for grade four pupils. This does not mean that the performance of the grade four pupils surpassed the performance of pupils in grades five and six, for the findings of the analysis for Hypothesis I show that there was a developmental trend in reading comprehension accompanying increase in pupils' grade level. The high correlations between STEP and Cloze Test, Series A for grade four pupils result from the fact that their scores on both tests were low and thus were highly positively correlated. Although correlations between the two sets of tests were significantly correlated at the .01 level of confidence for both grade five and grade six pupils as well, the correlation coefficients were smaller. This would indicate that the differentiation between their STEP and cloze test scores was greater, resulting in a smaller correlation coefficient.

The increase in achievement on STEP as grade level increased exhibited a degree of constancy. On the other hand, the increase in achievement on Cloze Test, Series A as grade increased became

TABLE XIII
CORRELATIONS BETWEEN STEP AND CLOZE TEST, SERIES A
BY GRADE (N = 121)

| Grade of Pupils | Number in Pupil Group X | Grade Level of Reading Passages | Correlations between <u>STEP</u> & <u>Cloze Test</u> , <u>Series A</u> | Significance |
|-----------------|-------------------------|---------------------------------|--|--------------|
| 4 | 42 | 4 | .819 | ** |
| | | 5 | .855 | ** |
| | | 6 | .807 | ** |
| | | 4-6 | .866 | ** |
| 5 | 44 | 4 | .382 | ** |
| | | 5 | .422 | ** |
| | | 6 | .563 | ** |
| | | 4-6 | .518 | ** |
| 6 | 35 | 4 | .531 | ** |
| | | 5 | .572 | ** |
| | | 6 | .564 | ** |
| | | 4-6 | .631 | ** |
| 4-6 | 121 | 4 | .676 | ** |
| | | 5 | .662 | ** |
| | | 6 | .726 | ** |
| | | 4-6 | .739 | ** |

** Significant at the .01 level

smaller (Appendix D). This may have resulted from the fact that certain reading abilities peculiar to understanding social studies were being tested in Cloze Test, Series A but not tested in STEP.

Null hypothesis II was rejected on the basis of the findings for Cloze Test, Series A. Correlations between pupils' general reading comprehension and their comprehension in reading social studies material in Cloze Test, Series A were significant for all grades at the .01 level of confidence.

Relationship Between Pupils' Comprehension On STEP and on Cloze Test, Series B

Correlation coefficients were calculated between pupils' scores on STEP and their scores on Cloze Test, Series B.

Table XIV presents these correlations.

Differences between the size of the correlation coefficients for this series was less than that for Cloze Test, Series A. With one exception all the correlations between STEP and Cloze Test, Series B were significant at the .01 level of confidence. The decrease on the successive grade levels of reading passages was slight for pupils in grades four and six, but very marked for fifth grade pupils. A non-significant correlation between these two tests was found for grade five pupils' reading scores on grade six passages.

Appendix D shows that for Cloze Test, Series A a steady upward progression in pupils' achievement on STEP accompanied increase in grade placement. Contrary to this the increase in achievement on Cloze Test, Series B, as grade level increased, was uneven. The increase in performance was greater between grades four and five

TABLE XIV
CORRELATIONS BETWEEN STEP AND CLOZE TEST, SERIES B
BY GRADE (N = 127)

| Grade of Pupils | Number in Pupil Group Y | Grade Level of Reading Passages | Correlations Between <u>STEP</u> & <u>Cloze Test</u> , <u>Series B</u> | Significance |
|-----------------|-------------------------|---------------------------------|--|--------------|
| 4 | 43 | 4 | .693 | ** |
| | | 5 | .685 | ** |
| | | 6 | .678 | ** |
| | | 4-6 | .733 | ** |
| 5 | 42 | 4 | .596 | ** |
| | | 5 | .372 | ** |
| | | 6 | .160 | N.S. |
| | | 4-6 | .441 | ** |
| 6 | 42 | 4 | .680 | ** |
| | | 5 | .676 | ** |
| | | 6 | .662 | ** |
| | | 4-6 | .725 | ** |
| 4-6 | 127 | 4 | .760 | ** |
| | | 5 | .740 | ** |
| | | 6 | .632 | ** |
| | | 4-6 | .754 | ** |

** Significant at the .01 level

than between grades five and six. This was true of the increase on Cloze Test, Series A as well.

By referring to Section V of this chapter it will be noted that general reading comprehension was a significant factor influencing pupils' scores on Cloze Test, Series B. Certain reading abilities, namely understanding of connectives and personal pronouns in social studies material, were being specifically tested in Cloze Test, Series B but not in STEP with the result that pupil's scores on Cloze Test, Series B did not keep pace with their scores on STEP. This may have been due to the difference in the understandings demanded by the two tests. Comprehension of social studies material and particularly of the connectives and personal pronouns contained therein, requires special application of general reading skills because emphasis is on understanding the interrelationships among the ideas in these passages.

The findings related to Cloze Test, Series B indicate that Hypothesis II is untenable.

V. INFLUENCE OF MENTAL ABILITY, GENERAL READING COMPREHENSION, CHRONOLOGICAL AGE, SEX, AND GRADE PLACEMENT ON SCORES ON CLOZE TEST, SERIES A AND ON CLOZE TEST, SERIES B

Hypothesis III states that there is no significant relationship between pupils' scores on Cloze Test, Series A and Cloze Test, Series B and the following factors: mental ability as measured by SCAT Form 5A general reading comprehension as measured by STEP Form 4A, chronological age, sex, and grade placement.

Stepwise linear regression analysis seeks to establish a linear regression equation for a particular response in terms of independent or predictor variables. An analysis was carried out to determine which of the five variables would constitute the best set of variables to predict the greatest variance on the total scores of Cloze Test, Series A and Cloze Test, Series B. The process involved a re-examination at every step of the regression of the variables incorporated into the model in previous steps. This secured a judgment on the contribution made by each variable as though it had been the most recent variable entered regardless of its actual point of entry into the regression model. Variables which provided a non-significant contribution were removed from the model. The process was continued until no further variables would be admitted to the equation and no more were rejected (Draper and Smith, 1966: 171ff).

Relationship Between Scores On Cloze Test, Series A and the Predictor Variables

A correlation matrix determined the order in which additions of the variables were made in the regression equation step by step. Table XV shows the correlation matrix for total scores on Cloze Test, Series A.

Being the variable most highly and positively correlated with the criterion response (Cloze Test, Series A, total score), SCAT was the first variable to enter the regression equation. At each step another variable was entered into the regression equation and its variance added to the regression sums of squares. The F value of each variable was tested for significance before its addition to or rejection from the linear regression at each step (Table XVI).

TABLE XV

CORRELATION MATRIX FOR PREDICTOR VARIABLES AND
CLOZE TEST, SERIES A (TOTAL SCORES)

| Variables | <u>SCAT</u> | <u>STEP</u> | Chronological Age | Sex | Grade Placement | <u>Cloze Test Series A Total Scores</u> |
|---|-------------|-------------|----------------------|--------|--------------------|---|
| <u>SCAT</u> | 1.0000 | .7857 | .4690 | -.0282 | .6474 | .8072 |
| <u>STEP</u> | | 1.0000 | .2734 | .0277 | .4317 | .7214 |
| CHRONOLOGICAL AGE | | | 1.0000 | .0612 | .8439 | .2656 |
| SEX | | | | 1.0000 | .0745 | .0244 |
| GRADE | | | | | 1.0000 | .4352 |
| <u>CLOZE TEST SERIES A TOTAL SCORES</u> | | | | | | 1.0000 |

TABLE XVI

ANALYSIS OF VARIANCE IN STEPWISE REGRESSION
ANALYSIS FOR CLOZE TEST, SERIES A

| Step In Regression | <u>Source of Variance (Sums of Squares)</u> | | | | | df | F |
|-----------------------|--|-------------------|--------------|--------------|----------------|-----|---------|
| | Regression on Variable | Regression SSQ | Error SSQ | Total SSQ | Mean Square | | |
| 1 | <u>SCAT</u> | 0.933 | | | 0.933 | 1 | 222.625 |
| | | | 0.499 | | 0.004 | 119 | |
| | | | | 1.431 | | 120 | |
| 2 | <u>SCAT</u> , and <u>STEP</u> | 0.961 | | | 0.480 | 2 | 120.604 |
| | | | 0.470 | | 0.004 | 118 | |
| | | | | 1.431 | | 120 | |
| 3 | <u>SCAT</u> , <u>STEP</u> and CHRONOLOGICAL AGE | 0.977 | | | 0.326 | 3 | 83.842 |
| | | | 0.454 | | 0.004 | 117 | |
| | | | | 1.431 | | 120 | |

Table XVII shows the calculations in the stepwise linear regression analysis on Cloze Test, Series A.

TABLE XVII
CALCULATIONS IN STEPWISE LINEAR REGRESSION
FOR CLOZE TEST, SERIES A (N = 121)

| Step In Regression | Variables Entered | F Value for Variable Entered | Probability Level | Total Variance Predicted |
|-----------------------|----------------------|------------------------------------|----------------------|--------------------------------|
| 1 | <u>SCAT</u> | 222.626 | .000 | 65.16 |
| 2 | <u>STEP</u> | 7.124 | .008 | 67.14 |
| 3 | CHRONOLOGICAL AGE | 4.06 | .046 | 68.25 |

Mental age as measured by SCAT Form 5A was the best single predictor of pupils' total scores on Cloze Test, Series A. Alone it accounted for 65.16 per cent of the variance. Together, general reading comprehension as measured by STEP Form 4A and SCAT accounted for 67.14 per cent of the total variance. The inclusion of chronological age to the equation accounted for an added 1.11 per cent of the total variance. The total variance accounted for a combined prediction by these three variables, SCAT, STEP and chronological age, was 68.25 per cent.

Sex and grade placement variables did not contribute significantly to the variance of the total scores of pupils on Cloze Test, Series A over and above that contributed by SCAT, STEP and chronological age and thus they were not entered into the regression equation.

The 31.75 per cent variance which remains unexplained by this analysis may in part be accounted for by special reading abilities specifically tested in Cloze Test, Series A but not included in the factors in SCAT, STEP and chronological age.

Null hypothesis III, which stated that there is no significant relationship between pupils' scores on Cloze Test, Series A and Cloze Test, Series B and mental ability (SCAT), general reading comprehension (STEP), chronological age, sex, and grade placement, was rejected for each of the variables except sex and grade placement. There was a significant relationship between pupils' total scores on Cloze Test, Series A and the factors of mental age, general reading comprehension, and chronological age.

Only those factors which contribute significantly over and above that contributed by the factors already in the regression are added to the regression equation. Grade placement as a separate factor was not added into the regression equation; however, this was because grade placement and chronological age are highly correlated factors (.84) as grade placement is partially dependent upon chronological age. Thus, once chronological age had been entered into the regression, the contribution of grade placement over and above this was not significant. It would be erroneous to conclude, therefore, that there is no significant relationship between pupils' grade and their scores on Cloze Test, Series A and Cloze Test, Series B. The findings of the data analysis to test hypothesis I substantiate this.

Relationship Between Scores On Cloze Test Series B and the Predictor Variables

Table XVIII presents the correlation matrix for Cloze Test, Series B.

TABLE XVIII
CORRELATION MATRIX FOR CLOZE TEST,
SERIES B

| Variables | <u>SCAT</u> | <u>STEP</u> | Chronological Age | Sex | Grade Placement | <u>Cloze Test Series B Scores</u> |
|-----------------------------|-------------|-------------|-------------------|--------|-----------------|-----------------------------------|
| <u>SCAT</u> | 1.0000 | .7886 | .4139 | .0209 | .6546 | .7538 |
| <u>STEP</u> | | 1.0000 | .1812 | .1695 | .4285 | .6933 |
| CHRONOLOGICAL AGE | | | 1.0000 | -.1854 | .8379 | .1880 |
| SEX | | | | 1.0000 | -.0094 | .1339 |
| GRADE | | | | | 1.0000 | .3681 |
| <u>CLOZE TEST, SERIES B</u> | | | | | | 1.0000 |
| TOTAL SCORES | | | | | | . |

Being the variable most highly correlated with the criterion response (Cloze Test, Series B, total score), SCAT was again the first variable to enter the regression equation.

TABLE XIX

ANALYSIS OF VARIANCE IN STEPWISE REGRESSION ANALYSIS
FOR CLOZE TEST, SERIES B

| Step in Regre- ssion | Regression Variable | Source of Variance (Sums of Squares) | | | | df | F |
|-------------------------------|---|---------------------------------------|--------------|--------------|----------------|-----|---------|
| | | Regression SSQ | Error SSQ | Total SSQ | Mean Square | | |
| 1 | <u>SCAT</u> | 1.199 | | | 1.199 | 1 | 164.541 |
| | | | 0.911 | | 0.007 | 125 | |
| | | | | 2.110 | | 126 | |
| 2 | <u>SCAT</u> and GRADE | 1.257 | | | 0.629 | 2 | 91.383 |
| | | | 0.853 | | 0.007 | 124 | |
| | | | | 2.110 | | 126 | |
| 3 | <u>SCAT,</u> GRADE and <u>STEP</u> | 1.294 | | | 0.431 | 3 | 64.983 |
| | | | 0.816 | | 0.007 | 123 | |
| | | | | 2.110 | | 126 | |

Table XX shows the calculations in the stepwise linear regression analysis on Cloze Test, Series B.

TABLE XX

CALCULATIONS IN STEPWISE LINEAR REGRESSION
FOR CLOZE TEST, SERIES B (N = 127)

| Step in Regre- ssion | Variable Entering | F Value for Variable Entered | Probability Level | Total Variance Predicted |
|----------------------------|----------------------|---------------------------------|----------------------|-----------------------------|
| 1 | SCAT | 164.543 | .000 | 56.82 |
| 2 | Grade | 8.436 | .004 | 59.57 |
| 3 | STEP | 5.520 | .020 | 61.31 |

As for Cloze Test, Series A, mental ability (SCAT) was the best single predictor of pupils' total scores on Cloze Test, Series B. Alone it accounted for 56.82 per cent of the variance. Grade placement of the pupils was for Cloze Test, Series B the second most significant variable furthering the amount of variance accounted for to 59.57 per cent. General reading comprehension added significantly bringing the total variance accounted for by a combination of SCAT, grade placement, and STEP to 61.31 per cent.

It was noted that the contribution to the variance of the total test scores made by sex and chronological age over and above that made by SCAT, grade placement, and STEP was non-significant and thus these two variables were not entered into the regression equation.

Thirty-nine per cent of the total variance has not been accounted for by the variables SCAT, grade placement, and STEP. Cloze Test, Series B was designed to test pupils' comprehension of specific language elements, connectives and personal pronouns, in social studies material. Greater variance is unaccounted for in this analysis than in that for Cloze Test, Series A which did not test pupils' comprehension of specific language elements in the same material. These results could indicate that the need to understand connectives and personal pronouns presents pupils with special problems when reading social studies material.

On the basis of the findings for Cloze Test, Series B, Hypothesis III was rejected for each of the variables except sex and chronological age. There was a significant relationship between pupils' total scores on Cloze Test, Series B and the factors of SCAT, grade placement, and STEP.

SUMMARY

Hypothesis I

Hypothesis I, which stated that there is no significant difference by grade between comprehension in reading social studies material in Cloze Test, Series A and comprehension in reading this same material as tested by Cloze Test, Series B, was rejected for the pupil grade placement variable. For the three grade levels (four, five, and six) and on total scores, grade placement of pupils had a significant effect on their comprehension scores on Cloze Test, Series A, and on Cloze Test, Series B ($p < .001$).

The cloze series written had a significant effect on pupil comprehension of the fourth and sixth grade levels of reading passages. That is, on grade four passages, pupils' scores on Cloze Test, Series B were better than their scores on Cloze Test, Series A. On grade six passages the opposite was noted; pupils' scores on Cloze Test, Series A, excelled their scores on Cloze Test, Series B. On passages designated as fifth grade reading materials, the pupils' scores on Cloze Test, Series B and on Cloze Test, Series A did not differ significantly, but appeared to be equally difficult. It was suggested that this fact may be attributable to the different types of connectives contained in these two levels of reading passages (grades four and six). For example, grade six reading passages contained a number of sentence linkers which were not found in grade four passages. Because these connectives

function to interrelate thoughts between large language units (sentences and paragraphs) they may be more difficult for children to comprehend. On fifth-grade material and on total scores the cloze series factor had no significant effect; pupils did equally well on the tests of both cloze series.

Hypothesis II

Hypothesis II, which stated that there is no significant correlation by grade between pupils' general reading comprehension scores on STEP Form 4A and their comprehension in reading social studies material in Cloze Test, Series A and in Cloze Test, Series B, was untenable for Cloze Test, Series A. For the three grade level pupil subscores and for pupil total scores on Cloze Test, Series A all correlations calculated were significant at the .01 level of confidence. Hypothesis II was untenable for Cloze Test, Series B with one exception. For grades four and six pupil subtotals and total scores on Cloze Test, Series B all correlations calculated were significant at the .01 level of confidence. Within Cloze Test, Series B, for the fifth-grade pupils, correlations between STEP and Cloze Test, Series B on grade four reading passages were significant at the .01 level of confidence; on grade five reading passages were significant at the .02 level; but were not significant on grade six reading passages.

For Cloze Test, Series A there was no consistent pattern of increase or decrease in the degree of correlation accompanying increase in the grade designation of reading materials. However, for Cloze Test, Series B a consistent decrease in correlation concomitant

with increase in grade designation of reading passages was noted.

Hypothesis III

Hypothesis III, which stated that there is no significant relationship between pupils' scores on Cloze Test, Series A and Cloze Test, Series B and the factors of mental ability as measured by SCAT Form 5A, general reading comprehension as measured by STEP Form 4A, chronological age, sex, and grade placement, was rejected for each of the variables except sex and grade placement for Cloze Test, Series A and except for sex and chronological age for Cloze Test, Series B.

SCAT was the variable which predicted the greatest variance on the total scores of both series. STEP added significantly to the variance on both series as well. Chronological age was a significant predictor for total scores on Cloze Test, Series A but not on Cloze Test, Series B. Grade placement added significantly to the variance of total scores on Cloze Test, Series B but not on Cloze Test, Series A. The contribution made by sex was non-significant for both series.

CHAPTER V

INFORMAL ANALYSIS OF PUPILS' ERRORS ON CLOZE TEST, SERIES B

In addition to the application of statistical procedures to the data obtained from this study, an informal analysis of the pupils' responses to the cloze items of Cloze Test, Series B was made. This further analysis was an attempt to ascertain more fully some of the particular trouble spots children encounter in their reading understanding of connectives and personal pronouns as cues to meaning in social studies material. No statistical tests were applied to the data; therefore, all comments are offered as observations only, not as definitive conclusions.

The chapter has been organized in accordance with the following format:

- I Procedure Followed in Organizing the Categories of Pupils' Error Responses
- II Frequency of Connective and Personal Pronoun Deletions
- III Pupils' Error Responses
- IV Observations of the Analysis of Pupils' Error Responses
- V Summary of the Observations.

I. PROCEDURE FOLLOWED IN ORGANIZING THE CATEGORIES OF PUPILS' ERROR RESPONSES

In studying the error responses to the cloze items of Cloze Test, Series B no pupils' papers were deleted because of order effects or incomplete data as they had been for the statistical treatment.

Large work sheets were organized to record all the pupils' responses to the cloze items of Cloze Test, Series B, the series in which connectives and personal pronouns had been deleted. A correct

response was not written in but was marked with a dash. All incorrect answers were written out in full and the tally of these, made by grade and total, was converted into percentages. Items to which a pupil failed to respond were marked NR (no response). Words with a total error score of 90 per cent or more and words with a total error score of 1 to 10 per cent were selected. Then the pupils' responses within these percentages were categorized into classes of errors and the percentage of error accounted for by each category was calculated.

A study of this data was made in an attempt to discover whether or not a recurring pattern in the error responses could be found.

A less detailed but similar study was made of words having total error scores of 11 to 30 per cent and words having a total error score of 70 to 89 per cent. A scan of the responses was made and a note of the answers which appeared to be recurring most frequently was taken, but no precise count was made nor percentages calculated.

II. FREQUENCY OF CONNECTIVE AND PERSONAL PRONOUN DELETIONS

Tables XXI and XXII show the frequency with which connectives and personal pronouns occurred in Cloze Test, Series B.

A total of twenty-eight connectives was tested, of which thirteen occurred in grade four reading passages, twenty-two in grade five passages, and fifteen in grade six passages. Comprehension of the following types of connectives was tested: coordinate connectives, correlatives, sentence linkers, subordinate connectives, (simple includers, relative pronouns, temporal, causal).

Eleven personal pronouns were included as test items in Cloze

TABLE XXI
 FREQUENCY OF CONNECTIVES IN CLOZE TEST,
SERIES B

| Connective Tested | Frequency of Occurrence | | | |
|---|-----------------------------------|-----------------------------------|----------------------------------|---------------------|
| | Grade Four Reading Passages | Grade Five Reading Passages | Grade Six Reading Passages | Total Occurrence |
| and | 14 | 19 | 15 | 48 |
| but | 4 | 3 | 3 | 10 |
| or | 3 | 4 | 1 | 8 |
| nor | | 1 | | 1 |
| as | 2 | | | 2 |
| when | 2 | 1 | 1 | 4 |
| while | | 1 | | 1 |
| after | 1 | 1 | 1 | 3 |
| before | | 1 | | 1 |
| later | | | 1 | 1 |
| finally | | | 1 | 1 |
| then | 1 | 2 | | 3 |
| first | 1 | | | 1 |
| if | 3 | 1 | | 4 |
| for | 1 | 1 | | 2 |
| because | 1 | | 1 | 2 |
| so | | 3 | | 3 |
| therefore, or thus, or consequently, or so | | 1 | | 1 |
| however | | 2 | 1 | 3 |
| where | 1 | 3 | 2 | 6 |
| who | | 2 | 7 | 9 |
| whose | | | 1 | 1 |
| which | 4 | 1 | | 5 |
| what | | | 2 | 2 |
| that (simple includer) | | 1 | 3 | 4 |
| that (relative pronoun) | | 2 | 1 | 3 |
| how | | 2 | | 2 |
| not . . . but | | 1 | | 1 |
| so . . . that | | 1 | | 1 |
| Totals | 38 | 51 | 44 | 133 |

TABLE XXII
FREQUENCY OF PERSONAL PRONOUNS IN
CLOZE TEST, SERIES B

| Pronoun Tested | Frequency of Occurrence | | | |
|----------------|-----------------------------------|-----------------------------------|----------------------------------|---------------------|
| | Grade Four Reading Passages | Grade Five Reading Passages | Grade Six Reading Passages | Total Occurrence |
| you | 3 | 1 | | 4 |
| he | 8 | 3 | 3 | 14 |
| his | 5 | 5 | 4 | 14 |
| him | 2 | 1 | | 3 |
| her | 1 | | | 1 |
| it | 7 | 4 | 3 | 14 |
| we | | | 3 | 3 |
| our | | | 4 | 4 |
| us | | 1 | 1 | 2 |
| they | 3 | 7 | 5 | 15 |
| their | 1 | 3 | 1 | 5 |
| Totals | 30 | 25 | 24 | 79 |

Test, Series B. Third person singular and plural pronouns occurred most frequently.

The six reading passages, comprising Cloze Test, Series B, contained a total of 212 cloze items of which 133 were connectives and 79 were personal pronouns.

III. PUPILS' ERROR RESPONSES

Table XXIII lists the words studied in the informal analysis of pupils' incorrect responses. These words have been divided into categories on the basis of their error percentages.

TABLE XXIII

WORDS USED IN THE INFORMAL ANALYSIS OF PUPILS'
ERROR RESPONSES

| Error Category and Grade Level of Reading Passage | Word | Number Assigned to the Reading Passage | Cloze Item | Error Percentage |
|---|----------|--|---------------|---------------------|
| 90% or greater | first | 2 | 15 | 95% |
| | for | | 22 | 97% |
| | or | | 23 | 93% |
| 4 | as | 4 | 18 | 92% |
| | his | | 20 | 95% |
| | after | | 22 | 94% |
| | or | | 36 | 90% |
| 5 | while | 6 | 4 | 94% |
| | for this | | 10 | 92% |
| | reason | | | |
| | after | | 11 | 95% |
| | however | | 17 | 98% |
| | nor | | 23 | 93% |
| | their | | 29 | 97% |
| | however | 8 | 6 | 91% |
| | for | | 34 | 97% |
| | or | | 38 | 98% |
| | or | | 40 | 92% |
| 6 | our | 10 | 10 | 94% |
| | not | | 17 | 94% |
| | but | | 19 | 95% |
| | or | | 22 | 97% |
| | however | | 28 | 93% |
| | whose | 12 | 2 | 97% |
| | after | | 27 | 96% |
| | later | | 29 | 97% |
| | finally | | 34 | 96% |
| 1% to 10% | you | 2 | 30 | 9.3% |
| | he | 4 | 13 | 9.0% |
| 4 | he | | 30 | 8.0% |
| | he | | 34 | 10 % |
| | he | | 35 | 9.7% |

TABLE XXIII (Continued)

| Error Category and Grade Level of Reading Passage | Word | Number Assigned to the Reading Passage | Cloze Item | Error Percentage |
|---|---------|--|---------------|---------------------|
| 5 | and | 6 | 12 | 9.0% |
| | and | | 22 | 6.3% |
| | and | 8 | 24 | 7.9% |
| | and | | 28 | 7.2% |
| 6 | and | 10 | 32 | 5.1% |
| | and | | 34 | 4.1% |
| | and | 12 | 4 | 8.9% |
| | and | | 17 | 3.1% |
| | and | | 24 | 7.9% |
| 70% to 89% | as | 2 | 6 | 72% |
| | her | | 7 | 85% |
| | but | | 12 | 71% |
| | then | | 18 | 70% |
| | where | | 24 | 71% |
| | because | 4 | 9 | 86% |
| | which | | 14 | 73% |
| | which | | 16 | 76% |
| | or | | 17 | 82% |
| | it | | 19 | 81% |
| | if | | 21 | 87% |
| | his | | 27 | 76% |
| | which | | 37 | 81% |
| | who | 6 | 16 | 74% |
| | so | | 27 | 78% |
| | which | | 34 | 78% |
| | so | 8 | 3 | 78% |
| 5 | that | | 4 | 79% |
| | but | | 10 | 89% |
| | who | | 11 | 81% |
| | what | | 35 | 77% |
| | how | 10 | 2 | 73% |
| | our | | 5 | 79% |
| | us | | 78% | |
| | that | | 16 | 71% |
| 6 | but | | 25 | 71% |

TABLE XXIII (Continued)

| Error Category and Grade Level of Reading Passage | Word | Number Assigned to the Reading Passage | Cloze Item | Error Percentage |
|---|---------|--|---------------|---------------------|
| 70% to 89% | who | 12 | 5 | 81% |
| | because | | 9 | 86% |
| | where | | 19 | 78% |
| | he | | 20 | 75% |
| | who | | 22 | 70% |
| | that | | 31 | 70% |
| 11% to 30% | they | 2 | 4 | 14% |
| | and | | 17 | 13% |
| | and | | 25 | 13% |
| | and | | 26 | 25% |
| | and | | 31 | 18% |
| | it | 4 | 2 | 24% |
| | and | | 3 | 11% |
| | his | | 7 | 17% |
| | when | | 8 | 29% |
| | his | | 11 | 12% |
| | he | | 15 | 29% |
| | and | | 23 | 16% |
| | he | | 29 | 14% |
| | but | | 31 | 18% |
| | he | | 32 | 30% |
| | and | | 37 | 18% |
| | and | 6 | 5 | 24% |
| | and | | 13 | 22% |
| | they | | 18 | 25% |
| | and | | 20 | 24% |
| | they | | 21 | 25% |
| | and | | 24 | 26% |
| | they | | 25 | 16% |
| | where | | 26 | 20% |
| | and | | 28 | 22% |
| | and | | 32 | 18% |
| | his | 8 | 2 | 27% |
| | his | | 5 | 23% |
| | and | | 9 | 15% |
| | he | | 12 | 16% |
| | he | | 13 | 13% |

TABLE XXIII (Continued)

| Error Category and Grade Level of Reading Passage | Word | Number Assigned to the Reading Passage | Cloze Item | Error Percentage |
|---|-------|--|---------------|---------------------|
| 11% to 30% 5 | him | 8 | 16 | 12% |
| | and | | 19 | 27% |
| | they | | 22 | 21% |
| | and | | 26 | 19% |
| | they | | 27 | 14% |
| | them | | 30 | 19% |
| | they | | 31 | 13% |
| | and | | 32 | 17% |
| 6 | and | 10 | 6 | 19% |
| | we | | 7 | 20% |
| | how | | 8 | 22% |
| | their | | 13 | 28% |
| | we | | 15 | 30% |
| | they | | 21 | 34% |
| | and | | 24 | 11% |
| | they | | 26 | 19% |
| | when | | 27 | 24% |
| | his | 12 | 12 | 25% |
| | them | | 13 | 26% |
| | and | | 21 | 22% |
| | they | | 25 | 20% |
| | and | | 28 | 12% |
| | they | | 32 | 24% |

A study of the data in the table showed no clear, discernible pattern; the answers given to items involving the same word used in a similar sentence structure varied considerably from one instance to the next. For example, the causal connective "for" in passage No. 2, item 22 and in passage No. 8, item 34 are used similarly, yet the error responses were varied. The error response categories and their percentages are shown in Table XXIV.

TABLE XXIV
ERROR RESPONSES TO THE WORD "FOR"

| Word "For" (causal connective) | | Word "For" (causal connective) | |
|--|------------|--|------------|
| Assigned to the Reading Passage Number 2 Cloze Item 22 | | Assigned to The Reading Passage Number 8 Cloze Item 34 | |
| Error Percentage | 97% | Error Percentage | 97% |
| Error Response Category | Percentage | Error Response Category | Percentage |
| coordinate conjunction | 33% | coordinate conjunction | 61% |
| verbs | --- | verbs | 10% |
| causal connectives | 25% | causal connectives | 5% |
| adverbs | --- | adverbs | 5% |
| NR (no response) | 3% | NR | 2% |
| miscellaneous (from, the,beautiful, Alberta) | 39% | miscellaneous (not, until, some, full) | 17% |

Percentages were calculated only for the more frequent types of response. Thus, the high miscellaneous category indicates the great variability found in the pupils' answers.

Another example can be given for the connective, "however," a conjunctive adverb (Table XXV).

TABLE XXV
ERROR RESPONSES TO THE WORD "HOWEVER"

| Word "However" (conjunctive adverb) | | Word "However" (conjunctive adverb) | |
|--|------------|---|------------|
| Assigned to the Reading Passage Number 6 Cloze Item 17 | | Assigned to the Reading Passage Number 8 Cloze Item 6 | |
| Error Percentage | 98% | Error Percentage | 91% |
| Error Response Category | Percentage | Error Response Category | Percentage |
| coordinate conjunctions | 16% | coordinate conjunctions | --- |
| temporal connectives | --- | temporal connectives | 20% |
| pronouns (personal, relative) | 43% | pronouns (personal, relative) | 7% |
| auxiliary verbs | --- | auxiliary verbs | 55% |
| adverbs | 11% | adverbs | --- |
| NR (no response) | 6% | NR | 3% |
| miscellaneous (they Indians, I, would, Boston) | 24% | miscellaneous (he, Red, because) | 15% |

As this type of variability was evident throughout the data obtained, the writer can make no definite statements regarding a pattern of errors in the pupils' responses; however, it may be worthwhile to comment on a few observations made during the course of this analysis.

IV. OBSERVATIONS OF THE ANALYSIS OF PUPILS' ERROR RESPONSES

Co-ordinate Connectives

From a study of Table XXIII it would appear that the pupils in grades four, five, and six in this study understand coordinate or equal-ranked and parallel constructions because of the fourteen items in the 1 to 10 per cent error category the word, "and" appeared nine times. However, a closer scrutiny of the data aroused the suspicion that this may not be so. "And" was tested a total of forty-eight times (Table XXI) which is almost five times as often as the next most frequent word occurred. The pupils could use it correctly where it was the expected response but they also used it incorrectly where it was not appropriate - in an item requiring "but" or "or," for example. It would seem that they understand the need for joining two thoughts but are imprecise in their understanding of what connecting word is needed. As "and" is met so frequently and has so many meanings it would seem that pupils' over-familiarity with it causes a failure to recognize its various meanings, which in turn, results in their using it indiscriminately and, therefore, imprecisely. They may perceive two thoughts as needing a connection but apparently they do not look further to determine whether or not the ideas are equal-ranked and parallel or disjunct or adversative ones. A study of Table XXIII confirms this. The word "or" is the only coordinate connective in the 90 per cent error category to be listed at each grade level. Scrutiny of pupils' error substitutions revealed that the most frequent response was "and." The pupils' comprehension would appear to be cumulative; that is, they add up the thoughts using "and" as they

proceed along the lines of print.

Particular difficulty in understanding "and" seemed to be encountered when it was used to join two words separated by a phrase.

A second possible explanation of pupils' excessive use of "and" might be that the pupils are reading at a literal level and are more concerned with lexical meaning than with the overall thought or the interrelationships between the thoughts in the passage.

Within the 90 per cent error category were several types of connectives: temporal, causal, coordinate, adversative, and illative. Regardless of which of these types of connective was required, "and" accounted for a considerable portion of the error percentage. For example, in the sentence (passage No.2, item 22), "They (smoking factory chimneys) belong to some of the biggest fabric mills in the world, _____ Bombay is the center of India's cotton industry," completion of the cloze item with "and," with which a third of the pupils responded, just accumulated the facts but failed to show the cause and effect relationship which was present in this sentence.

Although it was apparently somewhat less difficult to comprehend, the coordinate connective, "but," appears three times in the words comprising the 70 to 89 per cent error category as compared with its occurrence only once in the 90 per cent error category. In this latter case "but" was part of the correlative connective "not . . . but."

These observations suggest that pupils in grades four to six need instruction which will develop their greater, more precise understanding of coordinate connectives.

Temporal connectives. Among the cloze items in the 90 per

cent error category were a number of connectives used to indicate time sequence. The connective "after" appears in the list for each grade level of the reading passages. Of the three times "after" was tested, it twice indicated an indefinite span of time and may thus have been more difficult to comprehend than if a more definite reference of time had been made. "Later" and "finally," sentence linkers, also referred to indefinite time periods. This fact may, in part, account for the difficulty pupils experienced with these connectives.

Causal connectives. The causal connective "for" occurred in the 90 per cent error category for each of the two times it was tested. Although the pupils experienced problems in comprehending "because" when it was the required response, pupils tended to substitute "because" in place of "for." The opposite substitution was true as well; that is, "for" was supplied as a response in cloze items requiring "because." "So," also a causal connective, was among the words in the 70 to 89 per cent category.

In cloze items where a time sequence or causal relationship was involved the pupils' usual response was the most common such connective, for example, "when" for a time sequence or "because" to relate an effect with its cause. Pupils' answers showed that they have these words in their vocabulary but apparently lack sufficient understanding of their precise function in associating ideas.

Simple includers. "That" when functioning as a simple includer came within the 70 to 89 per cent error category. Pupils' answers to these items were varied. "And," "when," "where," and "how" were

among the most frequent substitutions given, indicating that pupils had very little understanding of this function word.

Sentence linkers. All of the sentence linkers tested in this investigation were in the 90 per cent error category. Children obviously found it difficult to retain, in their appropriate associations, a number of ideas and then draw a conclusion (therefore), or consider an alternate idea (however) as the case demanded. Such abilities demand precise reading comprehension.

Relative pronouns. The relative pronouns tested were among those cloze items which pupils found most difficult. It is interesting to note that the relative pronoun "that," which children themselves use in their speech and writing, was not included in the high error categories. Rather, the more formal "which," in each instance tested, occurred in the 70 to 89 per cent error category showing that it is indeed a difficult word for pupils in grades four to six.

Personal pronouns. With respect to answers to cloze items involving personal pronouns, pupils in the sample made the greatest percentage of errors for the possessive forms of these. On the whole, the pupils tended to use the definite and indefinite articles "the," "a," and, "an." Others used "this" which tended toward greater specificity yet lacked the required precision and failed to relate the response to the characters involved in the story and, in one instance, failed to recognize that the story was narrated in the first person. This is just one instance showing some pupils' comparative lack of sensitivity to language and meaning.

Pupils found easiest those personal pronouns for which the

referent was adjacent to the cloze item. In one case the exact pronoun was named four words previous to the cloze item.

Punctuation. A further observation indicated that perhaps pupils in grades four to six need to be made more aware of the function of punctuation in relation to an understanding of connectives. It is frequently the case that subordinate clauses introduced by temporal, causal, or conditional connectives are separated from the main clause by a comma. Sentence linkers, or conjunctive adverbs, are often both preceded and followed by commas.

In general, pupils' error responses suggested that they disregarded the punctuation clues given in the context. This fact tends to support an earlier statement that the students appeared to be comprehending the test material at a literal level. They seemed to be reading the passages in a piecemeal fashion; that is, often their responses were, out of context and disregarding punctuation, logically and grammatically correct; however, within the particular setting, the errors were ungrammatical and failed to associate the ideas in the correct relationship. In the sentence (passage No. 8, item 6) "His brother Thorwald, _____, decided to go," 50 per cent of the error responses were auxiliary verbs such as "had" and "has" which, without punctuation and irrespective of the context determined by the two previous sentences, would be grammatically correct but which, in this particular sentence, was ungrammatical and ignored the interrelationship between this and the previously expressed ideas.

V. SUMMARY OF THE OBSERVATIONS

In brief, the non-statistical analysis resulted in the following observations:

1. The highest error percentages tended to be associated with those words which occurred least frequently in the test passages.
2. Although at first it might appear that pupils in grades four, five, and six tested in this study had an adequate understanding of coordinate relationships this was possibly an unfounded assumption. The results showed an overdependency on the use of "and" to connect disjunct and adversative relationships requiring "or" and "but" as well as its proper use to link equal-ranked and parallel thoughts. In addition, "and" was used where subordinate clause connectives of time, cause-effect, and condition were required.
3. The pupils' understanding of temporal, causal, adversative, and illative connectives appeared to be gross and imprecise. Their most frequent responses were the most common terms for these, such as, "when" and "because." It would seem that they were unable to use alternate, more specific terms "first," "then," "later," "finally," or "as" and "for" as the case required. One response to a causal connective item was of particular interest. The student answered with "why" which suggests he understood that a reason for a fact was being explained, that they were adjacent and needed connecting, but showed he was at a loss to know which word was appropriate to indicate this relationship.
4. Pupils tended to find the possessive form of the personal pronouns more difficult than their nominative or objective forms.

Error substitutions were general terms somewhat dissociated from the context.

5. It would seem that pupils failed to utilize punctuation as a clue to meaning. By disregarding the punctuation, their responses were frequently grammatically incorrect and failed to associate the ideas in their proper temporal, causal, or adversative relationship.

CHAPTER VI

SUMMARY, MAIN FINDINGS, CONCLUSIONS, IMPLICATIONS, AND SUGGESTIONS FOR FURTHER RESEARCH

I. SUMMARY

The purpose of the present investigation was to study pupils' reading comprehension of connectives and personal pronouns contained in passages randomly selected from social studies books recommended for use in grades four to six.

Three hypotheses were formulated and tested using two-way analysis of variance, Pearson product-moment correlations, and stepwise linear regression analysis as the statistical procedures. A non-statistical analysis of pupils' error responses was made as well. A summary of the main findings of these analyses is found in the second part of this chapter.

In this investigation 301 grade four, five, and six pupils in two schools of the Edmonton Separate School System were tested. From these 301 pupils a test sample of 248 was obtained. There were five predictor variables. Mental ability and general comprehension were assessed by SCAT Form 5A and STEP Form 4A respectively. Chronological age, sex, and grade placement data were obtained from the official school records.

Pupils' reading comprehension of social studies material was tested by their completion of Cloze Test, Series A. This consisted of a series of six reading passages of social studies material randomly selected from two books at each of the three grade levels,

four, five, and six. A pre-cloze procedure was used to test pupils' reading comprehension in which every fifth word in each passage was deleted. Pupils' answers were credited if they supplied the cloze item with the exact word that had been deleted.

Pupils' reading comprehension of connectives and personal pronouns was tested by Cloze Test, Series B. This series was devised by deleting the connectives and personal pronouns contained in the social studies passages comprising Cloze Test, Series A. Pupils' total scores on Cloze Test, Series A for group X and on Cloze Test, Series B for group Y, were the criterion variables.

II. MAIN FINDINGS

The main findings of the investigation have been summarized in relation to the three hypotheses.

Hypothesis I

There is no significant difference by grade between pupils' comprehension in reading social studies material in Cloze Test, Series A and their comprehension in reading this same material as tested by Cloze Test, Series B.

1. There was a significant relationship between pupils' grade placement and their comprehension in reading social studies material in Cloze Test, Series A and in Cloze Test, Series B.

2. On fourth-grade passages, pupils' performance on Cloze Test, Series B was significantly better than their performance on Cloze Test, Series A.

3. On fifth-grade passages, pupils performance on Cloze Test, Series A and on Cloze Test, Series B did not differ significantly.

4. On sixth-grade passages, performance on Cloze Test, Series A

was significantly better than their performance on Cloze Test, Series B.

On the basis of these findings Hypothesis I was rejected except for grade five.

Hypothesis II

There is no significant correlation by grade between pupils' general reading comprehension scores on STEP Form 4A and their comprehension in reading social studies material in Cloze Test, Series A and in Cloze Test, Series B.

There was a significant relationship between pupils' general reading comprehension as measured by STEP Form 4A and their comprehension in reading social studies material in Cloze Test, Series A and Cloze Test, Series B. Therefore, Hypothesis II was rejected.

Hypothesis III

There is no significant relationship between pupils' scores on Cloze Test, Series A and Cloze Test, Series B, and the following factors: Mental ability as measured by SCAT, Form 5A, general reading comprehension as measured by STEP, Form 4A, chronological age, sex, and grade placement.

1. Mental age as measured by SCAT Form 5A was the variable which predicted the greatest variance in the total scores of pupils on both cloze series.

2. General reading comprehension as measured by STEP Form 4A was a significant factor related to pupils' comprehension on Cloze Test, Series A and on Cloze Test, Series B.

3. Chronological age was a significant predictor of total scores on Cloze Test, Series A but not significantly related to pupils' total scores on Cloze Test, Series B.

4. There was a significant relationship between pupils' grade placement and their total scores on Cloze Test, Series B but not between pupils' grade placement and their total scores on Cloze Test, Series A.

5. There was no significant relationship between pupils' sex and their comprehension on Cloze Test, Series A nor between pupils' sex and their comprehension on Cloze Test, Series B.

Hypothesis III was rejected in relation to the mental ability and general reading comprehension factors for both series. For Cloze Test, Series A it was rejected for the chronological age factor. It was further rejected for Cloze Test, Series B in relation to the grade placement variable. Hypothesis III was accepted for both cloze series in relation to the variable of sex.

Findings of the Informal Analysis of Pupils' Error Responses

Additional observations resulting from a non-statistical study of pupils' error responses were made. Briefly, the informal analysis resulted in the following observations:

1. The highest error percentages tended to be associated with those words which occurred least frequently in the test passages.

2. The pupils tested in grades four, five, and six tended to use "and" too frequently to indicate a variety of relationships ranging from coordinate, disjunct or adversative relationships requiring "or" or "but," to its use to connect subordinate ideas.

3. The pupils' error responses suggested they had an imprecise understanding of temporal, causal, adversative, and illative connectives. Generally, only the most common function words as

"when" and "because" were supplied as cloze responses.

4. The pupils tended to find the possessive form of the personal pronouns more difficult than their nominative or objective forms.

5. Frequently, the pupils neglected to utilize punctuation as a meaning cue. A disregard of the given punctuation resulted in grammatically incorrect responses which failed to associate the ideas in their proper temporal, causal, or adversative relationships.

III. CONCLUSIONS AND IMPLICATIONS

The following conclusions and implications are applicable only to test populations similar to that in this study.

1. Since the scores of the grade six pupils on Cloze Test, Series A and on Cloze Test, Series B were significantly better than the scores of the grade four pupils on these tests, it was concluded that grade placement was an important factor affecting pupils' comprehension in reading social studies material and their reading comprehension of connectives and personal pronouns in such materials. The results of Robertson's study (1966) also revealed a developmental trend in children's comprehension of connectives from grades four to six.

2. However, despite the upward trend, pupils' mean comprehension scores on Cloze Test, Series A and on Cloze Test, Series B were distributed between 75 per cent and 90 per cent, a range approximately equal to that recommended by Smith (1963), Austin (1961) (70-75 per cent), and Spache (1964) (60 per cent) for an effective instructional level of comprehension. This level may be defined as one at which pupils need to be taught the reading skills

required and thus the teacher would need to assume a double task; that is, teaching social studies and also teaching the reading skills necessary to comprehend the material. The percentage range achieved by pupils in this study is less than the 90 to 100 per cent independent level of comprehension recommended by Betts (1946). Much of the reading required in the social studies area must be done independently by pupils in grades four to six. The results of the present investigation indicate a need for educators of teachers as well as educators of pupils in grades four to six to be aware of the problems children meet in reading social studies material and particularly in understanding the connectives and personal pronouns therein. Just as the studies of Rudolf (1949) and Brownell (1952) showed the improvements in social studies made by pupils given specific lessons to develop reading skills pertinent to such material, so too, the investigator suggests that similar improvements in pupils' comprehension of connectives and personal pronouns might be forthcoming if instruction was organized to provide for the sequential development of such understandings.

3. Although the results of this study showed high positive correlations between general reading comprehension and performance on both Cloze Test, Series A and Cloze Test, Series B which were significant at the .01 level of confidence, these correlation coefficients diminished in size as grade level increased. This decrease in correlations from grades four to six was evidence of a widening gap between general reading comprehension and the achievement in specific reading skills needed to comprehend social studies material,

especially the connectives and personal pronouns it contained. Such specialized skills are not tested thoroughly by standardized reading tests such as STEP.

This study has shown that a special application of basic reading skills is necessary in reading social studies material. Emphasis needs to be put on understanding the interrelationships among ideas associated by means of connectives and personal pronouns. Although developmental reading programs do concentrate on developing in children the basic reading skills, a program designed to extend these abilities into the curricular area of social studies is needed. This fact suggests important implications for teacher education programs and for the teacher in the classroom. Education courses offering theoretical and practical instruction in the teaching of reading should endeavor to acquaint prospective teachers with the latest methods and materials which could best benefit grade four, five, and six children in attaining skills pertinent to effective reading in social studies material. Committees of teachers, either independently or guided by reading specialists, could, after conducting pilot studies in their classrooms, organize a handbook outlining the reading skills needed, recommending materials suitable to the grade level, and suggesting possible teaching procedures for reading instruction in social studies. Some reader texts containing social studies material are becoming available and could prove useful in developing these reading skills.

A further implication is suggested by this finding of the

study. Taylor (1953), Bormuth (1962, 1963), Rankin (1957, 1959), Jenkinson (1957) and Hafner (1963) have shown that the cloze procedure is a valid tool for measuring reading comprehension. Bormuth (1964) advocates the use of this technique for assessing a variety of types of reading comprehension in grades four to six. Pupils' understanding of the association of ideas in social studies material was one of these he tested and showed to be effective. The usual standardized reading tests do not seem to test pupils' use of specific reading skills required in reading social studies material (Chapter II, Section IV). The results of this study support Bormuth's recommendation for the use of cloze tests to check specific reading comprehension skills.

4. It was concluded that mental ability (SCAT) and general reading comprehension (STEP), chronological age, and grade placement are important factors affecting specific reading skills in comprehending social studies material. However, it was also concluded that sex had no apparent effect on pupils' reading comprehension as tested by the the cloze tests of both series.

Mental ability and general reading ability have been shown to be vital to an understanding of social studies reading material and important to an understanding of the connectives and personal pronouns therein. With the best achievers in the sample scoring less than 90 per cent in Cloze Test, Series A and Cloze Test, Series B the findings of this study would suggest the necessity for greater teacher awareness of the needs of individuals to become proficient independent readers particularly in reading social studies materials. The use of the cloze technique might prove feasible as a teaching technique with these

pupils. Classroom teachers or reading specialists could devise suitable materials effective for developing these understandings.

5. Since this study showed that pupils found most difficult those connectives which occurred least frequently in the test passages and as Ruddell (1965, 270-274) found that fourth-grade children's reading comprehension scores on passages containing high frequency language patterns were significantly greater than scores on passages modelled on low frequency language patterns, the investigator concluded that, in part, an adaptation of the beginning social studies reading materials to language patterns which more closely approximate those of children's speech would facilitate their reading comprehension of such materials. Moreover, a systematic introduction of more formal language patterns is essential. Textbook authors and publishers are however, often unmindful of these needs. What is needed from them is a recasting of social studies materials into more appropriate language patterns geared to the development level of grade four, five, and six pupils or from teachers more careful, detailed instructional programs which will help children understand the more formal language patterns and function words authors employ to associate ideas in time, place, and cause-effect relationships.

6. From a non-statistical study of pupils' error responses which revealed that the pupils tested exhibited an imprecise, diffuse understanding of the connectives contained in the social studies reading passages of Cloze Test, Series B, it was concluded that much further work is needed to develop pupils' understanding of coordinate and subordinate connectives beginning in grade four and progressing through grades five, six, and beyond. The attainment of such understandings would require the team efforts of teachers

and pupils together with helpful directives from reading specialists.

7. So frequently was punctuation disregarded by the pupils as a cue to meaning that it is reasonable to conclude that lessons usually reach no further than the discussion of end sentence punctuation. Instruction should incorporate both discussion and practice to make pupils consciously aware of certain punctuation (commas, semi-colons) as aids to meaning. This could best be taught in conjunction with the function words, the connectives, with which they most frequently occur.

IV. SUGGESTIONS FOR FURTHER RESEARCH

1. A similarly devised investigation testing junior high school pupils could be beneficial in identifying those connectives and personal pronouns which, for them, are obstacles to effective reading of social studies materials. Their difficulty in comprehension is perhaps greater than that experienced by pupils in grades four to six, because, in junior high school, pupils are exposed to a greater breadth and depth of work in this subject area.

2. Each of the curricular areas demands of pupils its own particular skills and understandings. As it has been shown that pupils experience problems in reading social studies, it is reasonable to suggest that studies designed to evaluate pupils' understanding of the connectives found most frequently in mathematics texts or in science texts might help educators to identify the reading problems in these subject areas.

3. Working with high school students, Jenkinson (1957) used a cloze technique to study pupils' reading comprehension. In a

follow-up interview she asked individual pupils to discuss the reasons for their choice on a cloze response. Further insight into problems contributing to children's imprecise understanding of connectives and personal pronouns in social studies material might be gained by employing this additional technique with pupils in grades four to six.

4. An investigation to assess the value of using the cloze procedure in grades four, five, and six, as a teaching device for developing pupils' comprehension of connectives and personal pronouns might be devised by having a pre-test followed by a post-test with an intervening instruction period of four to six weeks.

5. The connectives and personal pronouns studied in this investigation were selected at random. An improvement on this procedure would be to purposely select the connectives. These might be chosen on the basis of the frequency with which they occur in a number of series of social studies books used as texts or as suitable reference materials by pupils in grades four to six.

6. A limitation of the present study was the fact that, although they were comparable, two discrete groups wrote the cloze test series; that is, one group wrote only Cloze Test, Series A; the second group wrote only Cloze Test, Series B. It would be interesting to have a second study carried out wherein the interval between the first and second sessions would be of sufficient duration that no significant order effects would be functioning. Then within-group comparison as to performance on the two series could be made and not only between-group comparisons as was possible in this study.

7. An area of possible interest and benefit might be a study to determine whether or not a relationship exists between the frequency and types of connectives found in social studies texts and the readability index of these texts.

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APPENDICES

APPENDIX A

CLOZE TEST, SERIES A

CLOZE TESTS

Directions:

Read these directions with the students and make any necessary explanations.

Write your name on the paper - last name and then your first name.

This is a completion test. Certain words have been omitted from this passage and blank spaces left. These blank spaces have been underlined.

Read through the passage carefully and then try to fill in the blank spaces, ONE word to each space. You may have to re-read the passage several times to do this. All clues to the words are in the passage.

When completed, re-read to see if it makes sense.

PRINT the words in each space.

NO TIME LIMIT

e.g. (1) Yesterday I heard a _____ bark.

(2) Historians have made many _____ about the discoveries which _____ made before man learned _____ write.

1. _____ NAME: _____,
(last name) (first name)

Bombay is not one of ¹ _____ ancient towns of India.
² _____ three hundred years ago, ³ _____ was only a miserable
⁴ _____ village held by Portuguese ⁵ _____. They thought so little
⁶ _____ it that they gave ⁷ _____ to a Portuguese princess
⁸ _____ a part of her ⁹ _____ when she married King ¹⁰ _____
the Second of England. ¹¹ _____ Charles let English traders ¹² _____
the village. Now this ¹³ _____ village has become one ¹⁴ _____ the
greatest cities in ¹⁵ _____ world. It is an ¹⁶ _____ port and a
great ¹⁷ _____ of industry and commerce.

¹⁸ _____ are taxis in Bombay, ¹⁹ _____ perhaps you would
prefer ²⁰ _____ see the town in ²¹ _____ more relaxed way. If
²² _____, the thing to do ²³ _____ to get a horse ²⁴ _____
called a 'victoria'. First, ²⁵ _____ along the beautiful Marine
²⁶ _____ and see Bombay's great ²⁷ _____ and apartment houses. Then
²⁸ _____ Bombay's most fashionable area, ²⁹ _____ Hill. Here very
wealthy ³⁰ _____ have built their homes. ³¹ _____ the highest point
of ³² _____ hill, you can get ³³ _____ good view of this
³⁴ _____ city. In the distance ³⁵ _____ a forest of smoking
³⁶ _____ chimneys. They belong to ³⁷ _____ of the biggest fabric
³⁸ _____ in the world, for ³⁹ _____ is the center of ⁴⁰ _____
cotton industry.

Not all ⁴¹ _____ streets of Bombay are ⁴² _____ or
modern. There are ⁴³ _____ market streets where women ⁴⁴ _____
baskets of vegetables and ⁴⁵ _____ carry on a thriving ⁴⁶ _____
on the sidewalks. The ⁴⁷ _____ walk along the middle ⁴⁸ _____ the
roads. In streets ⁴⁹ _____ this, the driver must ⁵⁰ _____ very
slowly and keep ⁵¹ _____ hand on the horn. ⁵² _____ these are only
the ⁵³ _____ streets. If you are ⁵⁴ _____ a hurry, you can
⁵⁵ _____ into a main street ⁵⁶ _____ go more quickly.

3. _____ NAME: _____, _____
(last name) (first name)

During the planting and the ¹ _____ seasons Mr. Das may
² _____ in the fields from ³ _____ to dusk. It is ⁴ _____
pleasant to work in ⁵ _____ heat and mud, but ⁶ _____ Das and
the other ⁷ _____ of the village are ⁸ _____ to it. Mr. Das
⁹ _____ his father in the ¹⁰ _____ when he was Shambhu's
¹¹ _____, because there was no ¹² _____ for him to go ¹³ _____.
Now Shambhu helps his ¹⁴ _____ in the fields only ¹⁵ _____ the
busiest times.

Mr. ¹⁶ _____ never wears a shirt ¹⁷ _____ the fields and
seldom ¹⁸ _____ other times. He has ¹⁹ _____ piece of clothing which
²⁰ _____ wraps around himself to ²¹ _____ loose trousers. This is
²² _____ a dhoti. He also ²³ _____ a piece of cloth, ²⁴ _____
feet in size, which ²⁵ _____ as towel, turban, or ²⁶ _____ as the
need arises. ²⁷ _____ is his gamcha. If ²⁸ _____ has time at noon,
²⁹ _____ his lunch of rice ³⁰ _____ dal, fish, and vegetables
³¹ _____ Mrs Das brings to ³² _____ in the field, he ³³ _____
his gumcha out in ³⁴ _____ patch of shade and ³⁵ _____ a nap. Some
days ³⁶ _____ must keep right on ³⁷ _____. In winter he wears
³⁸ _____ cape called a chadar.

³⁹ _____ days Mr Das does ⁴⁰ _____ have to go out
⁴¹ _____ the fields, but he ⁴² _____ gets up early. He ⁴³ _____
out the cowshed and ⁴⁴ _____ in the vegetable garden. ⁴⁵ _____ the
middle of the ⁴⁶ _____ he walks into the ⁴⁷ _____. Sometimes he
attends the ⁴⁸ _____ or village council which ⁴⁹ _____ at a
platform built ⁵⁰ _____ a big banyan tree.

5. _____

NAME: _____,

(last name)

(first name)

After depending on coffee and ¹ _____ as chief exports
for ² _____ than 300 years, Central ³ _____ had a great, new
⁴ _____ with the coming of ⁵ _____ century - bananas. A ripe
⁶ _____ does not keep very ⁷ _____, but fortunately it can
⁸ _____ picked while it is ⁹ _____ and green. If you
¹⁰ _____ the banana cool on ¹¹ _____ boat journey from Central
¹² _____ to this country, you ¹³ _____ get it to market
¹⁴ _____ it is too ripe. ¹⁵ _____ this reason, the banana
¹⁶ _____ is really a kind ¹⁷ _____ big refrigerator. After we
¹⁸ _____ refrigerator ships, people from ¹⁹ _____ and other
cities in ²⁰ _____ United States went to ²¹ _____ Rica and
started banana ²² _____.

The banana likes the ²³ _____ and moist climate and
²⁴ _____ rains of the eastern ²⁵ _____ of Central America. The
²⁶ _____ Indians who lived in ²⁷ _____ part of Costa Rica,
²⁸ _____, did not want to ²⁹ _____ on banana plantations. They
³⁰ _____ to hunt and fish ³¹ _____ have a little garden
³² _____. They preferred to sit ³³ _____ the shade and go
³⁴ _____ the white man's costly ³⁵ _____. Nor did the people
³⁶ _____ the highlands of Costa ³⁷ _____ want to go down
³⁸ _____ the hot land and ³⁹ _____ among the insects. They
⁴⁰ _____ to live where it ⁴¹ _____ cool. So the banana
⁴² _____ went over to Jamaica ⁴³ _____ hired Negroes to
work ⁴⁴ _____ banana plantations. The Negroes ⁴⁵ _____ been
used to hot ⁴⁶ _____ in Africa.

For many ⁴⁷ _____ eastern Costa Rica grew ⁴⁸ _____
shipped four out of ⁴⁹ _____ ten bananas that were ⁵⁰ _____
in the United States ⁵¹ _____ Europe. Then came a ⁵² _____
which killed most of ⁵³ _____ banana plants.

7. _____ NAME: _____,
(last name) (first name)

When Eric the Red died ¹ _____ son, Lief the Lucky,
² _____ the Chief of Greenland, ³ _____ was so busy that
⁴ _____ did not find time ⁵ _____ return to Vinland. His
⁶ _____ Thorwald, however, decided to ⁷ _____. He and his men
⁸ _____ more land and spent ⁹ _____ winters on the new
¹⁰ _____. But Thorwald was attacked ¹¹ _____ a large number of
¹² _____ copper-coloured natives who ¹³ _____ over the water in
¹⁴ _____ canoes. In the battle ¹⁵ _____ was badly wounded under
¹⁶ _____ arm by an arrow. ¹⁷ _____ knew he was going ¹⁸ _____
die, so he asked ¹⁹ _____ men to carry him ²⁰ _____ a cape
overlooking the ²¹ _____, where he had hoped ²² _____ build a
settlement. They ²³ _____ so, and there the ²⁴ _____ Viking
breathed his last. ²⁵ _____ men stayed on another ²⁶ _____.
Then in the spring ²⁷ _____ loaded their boats with ²⁸ _____ and
returned to Greenland.

²⁹ _____ the next few years, ³⁰ _____ is believed,
other Vikings ³¹ _____ from Greenland and settled ³² _____
America. Sometimes they quarrelled ³³ _____ fought among themselves;
but ³⁴ _____ often the savage natives ³⁵ _____ them. At last they
³⁶ _____ returned to Greenland and ³⁷ _____ five hundred years
America ³⁸ _____ forgotten by the white ³⁹ _____.

No one knows exactly ⁴⁰ _____ Vinland was, for much
⁴¹ _____ what we know about ⁴² _____ has come down to ⁴³ _____
only through the legends ⁴⁴ _____ stories of the Vikings ⁴⁵ _____
were told or sung ⁴⁶ _____ their fires in the ⁴⁷ _____ time.
Vinland was probably ⁴⁸ _____ along the coast of ⁴⁹ _____ Scotia
or the United ⁵⁰ _____, or it may even ⁵¹ _____ been in the Gulf
⁵² _____ St Lawrence.

9. _____

NAME: _____,

(last name)

(first name)

We have already read the ¹ _____ of how Canadians in
² _____ parts of our country ³ _____ live, and how the
⁴ _____ part of our large ⁵ _____ was explored and settled
⁶ _____ people from Europe. Now ⁷ _____ shall see how Western
⁸ _____ became what it is ⁹ _____.

Our story will tell ¹⁰ _____ about explorers who ventured
¹¹ _____ from their homes in ¹² _____ Canada to search for
¹³ _____ western boundary of our ¹⁴ _____. We shall learn that
¹⁵ _____ west coast of Canada ¹⁶ _____ first reached not by
¹⁷ _____ who crossed the continent ¹⁸ _____ by sailors who came
¹⁹ _____ way of the Pacific ²⁰ _____.

The first white people ²¹ _____ came to Western Canada
²² _____ the fur traders. They ²³ _____ alone or formed
companies ²⁴ _____ gather the wealth that ²⁵ _____ to be found
in ²⁶ _____ lakes and streams. But ²⁷ _____ traders were often
mean ²⁸ _____. They destroyed one fur ²⁹ _____ after another
by killing ³⁰ _____ many of the fur- ³¹ _____ animals. There came
a ³² _____ when people had to ³³ _____ to other work to
³⁴ _____ a living.

Two hundred ³⁵ _____ after the first settlement ³⁶ _____
Eastern Canada, the rich ³⁷ _____ land of the prairies ³⁸ _____
the first group of ³⁹ _____ to the valley of ⁴⁰ _____ Red River
in Manitoba. ⁴¹ _____ discovery of gold brought ⁴² _____ to
British Columbia.

However, ⁴³ _____ was only about sixty ⁴⁴ _____ ago that
people from ⁴⁵ _____ parts of the world ⁴⁶ _____ to come in large
⁴⁷ _____. These were the ancestors ⁴⁸ _____ many of the
children ⁴⁹ _____ live in the West ⁵⁰ _____. They were the men
⁵¹ _____ women who helped to ⁵² _____ the vast wilderness into
⁵³ _____ thriving land of farms, ⁵⁴ _____, towns, and cities.

11. _____

NAME: _____,
(last name) (first name)

In 1670 the Hudson's Bay ¹_____ was founded in England.
²_____ it was granted all ³_____ land whose rivers drained
⁴_____ Hudson Bay. This land, ⁵_____ course, included most
of ⁶_____ is now known as ⁷_____ Prairie Provinces. The
Hudson's ⁸_____ Company still has trading ⁹_____ in northern
and western ¹⁰_____.

The first white man ¹¹_____ reach the prairies was ¹²_____
Kelsey, who agreed to ¹³_____ for the Hudson's Bay ¹⁴_____. It
is not certain ¹⁵_____ where he went, but ¹⁶_____ must have
reached the ¹⁷_____, because on his return ¹⁸_____ surprised
his friends by ¹⁹_____ them of great herds ²⁰_____ buffalo
roaming over level ²¹_____. Later, in 1731, a ²²_____ explorer,
La Verendrye, came from ²³_____ with his followers. He ²⁴_____
by canoe, making his ²⁵_____ by lakes and streams ²⁶_____
meeting place of ²⁷_____ Red River and the ²⁸_____, where the
city of ²⁹_____ grew up many years ³⁰_____. There he built a
³¹_____, and then continued on ³²_____.

The first settlers were ³³_____, who came by way ³⁴_____
Hudson Bay and the ³⁵_____ and rivers of the ³⁶_____. They were
sent out ³⁷_____ Lord Selkirk in 1811, ³⁸_____ reached the Red
River ³⁹_____ following year. After all ⁴⁰_____ of difficulties
due to ⁴¹_____ traders, floods, and grasshoppers, ⁴²_____
settlers succeeded in gathering ⁴³_____ harvest. Later, other settlers
⁴⁴_____ the prairies by way ⁴⁵_____ La Verendrye's water route
from ⁴⁶_____ east.

It was from ⁴⁷_____ south that the next ⁴⁸_____ arrived.
They came by ⁴⁹_____ of the farmlands of ⁵⁰_____ United States,
and travelled ⁵¹_____ along the Red River ⁵²_____. Finally, when
the railway ⁵³_____ eastern Canada was completed ⁵⁴_____ the
northern shore of ⁵⁵_____ Superior, hundreds of thousands ⁵⁶_____
settlers were able to ⁵⁷_____ without suffering the hardships
⁵⁸_____ the first pioneers.

APPENDIX B

CLOZE TEST, SERIES B

2. _____ NAME: _____,
(last name) (first name)

Bombay is not one of the ancient towns of India. About three hundred years ago, ¹_____ was only a miserable fishing village held by Portuguese traders. ²_____ thought so little of ³_____ that ⁴_____ gave ⁵_____ to a Portuguese princess ⁶_____ a part of ⁷_____ gift ⁸_____ she married King Charles the Second of England. King Charles let English traders use the village. Now this fishing village has become one of the greatest cities in the world. ⁹_____ is an important port ¹⁰_____ a great center of industry ¹¹_____ commerce.

There are taxis in Bombay, ¹²_____ perhaps ¹³_____ would prefer to see the town in a more relaxed way. ¹⁴_____ so, the thing to do is to get a horse cab called a 'victoria'. ¹⁵_____, drive along beautiful Marine Drive ¹⁶_____ see Bombay's great hotels ¹⁷_____ apartment houses. ¹⁸_____ visit Bombay's most fashionable area, Malabar Hill. Here very wealthy people have built ¹⁹_____ homes. From the highest point of the hill, ²⁰_____ get a good view of this great city. In the distance is a forest of smoking factory chimneys. ²¹_____ belong to some of the biggest fabric mills in the world, ²²_____ Bombay is the center of India's cotton industry.

Not all the streets of Bombay are beautiful ²³_____ modern. There are crowded market streets ²⁴_____ women with baskets of vegetables ²⁵_____ fruits carry on a thriving business on the side walks. The people must walk along the middle of the roads. In streets like this, the driver must drive very slowly ²⁶_____ keep ²⁷_____ hand on the horn. ²⁸_____ these are only the side streets. ²⁹_____ you are in a hurry, ³⁰_____ can turn into a main street ³¹_____ go more quickly.

4. _____

NAME: _____,
(last name) (first name)

During the planting ¹_____ the harvest seasons Mr. Das may work in the fields from dawn to dusk. ²_____ is not pleasant to work in the heat ³_____ mud, ⁴_____ Mr Das ⁵_____ the other men of the village are used to ⁶_____. Mr Das helped ⁷_____ father in the fields ⁸_____ he was Shambhu's age, ⁹_____ there was no school for ¹⁰_____ to go to. Now Shambhu helps ¹¹_____ father in the fields only at the busiest times.

Mr. Das never wears a shirt in the field, ¹²_____ seldom at other times. ¹³_____ has one piece of clothing ¹⁴_____ he wraps around himself to make loose trousers. This is called a dhoti. ¹⁵_____ also has a piece of cloth, four feet in size, ¹⁶_____ serves as towel, turban, ¹⁷_____ mat ¹⁸_____ the need arises. ¹⁹_____ is ²⁰_____ gamcha. ²¹_____ he has time at noon, ²²_____ his lunch of rice with dal, fish, ²³_____ vegetables ²⁴_____ Mrs Das brings to ²⁵_____ in the field, ²⁶_____ spreads ²⁷_____ gamcha out in a patch of shade ²⁸_____ has a nap. Some days ²⁹_____ must keep right on working. In winter ³⁰_____ wears a cape called a chadar.

Some days Mr Das does not have to go into the fields, ³¹_____ he still gets up early. ³²_____ cleans out the cowshed ³³_____ works in the vegetable garden. In the middle of the morning ³⁴_____ walks into the village. Sometimes ³⁵_____ attends the panchayat ³⁶_____ village council ³⁷_____ meets at a platform built around a big banyan tree.

6. _____

NAME: _____,
(last name) (first name)

After depending on coffee ¹ _____ hides as chief exports for more than 300 years, Central America had a great, new industry with the coming of this century - bananas. A ripe banana does not keep very long, ² _____ fortunately, ³ _____ can be picked ⁴ _____ it is hard ⁵ _____ green. ⁶ _____ you keep the banana cool on the boat journey from Central America to this country, ⁷ _____ can get ⁸ _____ to market ⁹ _____ it is too ripe. ¹⁰ _____ the banana ship is really a kind of big refrigerator. ¹¹ _____ we had refrigerator ships, people from Boston ¹² _____ other cities in the United States went to Costa Rica ¹³ _____ started banana plantations.

The banana likes the hot ¹⁴ _____ moist climate ¹⁵ _____ heavy rains of the eastern coast of Central America. The few Indians ¹⁶ _____ lived in this part of Costa Rica, ¹⁷ _____, did not want to work on banana plantations. ¹⁸ _____ preferred to hunt ¹⁹ _____ fish ²⁰ _____ have a little garden patch. ²¹ _____ preferred to sit in the shade ²² _____ go without the white man's costly things. ²³ _____ did the people on the highlands of Costa Rica want to go down into the hot land ²⁴ _____ work among the insects. ²⁵ _____ wanted to live ²⁶ _____ it was cool. ²⁷ _____ the banana farmers went over to Jamaica ²⁸ _____ hired Negroes to work ²⁹ _____ banana plantations. The negroes had been used to hot weather in Africa.

For many years, eastern Costa Rica grew ³⁰ _____ shipped four out of every ten bananas ³¹ _____ were eaten in the United States ³² _____ Europe. ³³ _____ came a disease ³⁴ _____ killed most of the banana plants.

8. _____

NAME: _____,
(last name) (first name)

¹ _____ Eric the Red died ² _____ son, Lief the Lucky, became the Chief of Greenland. Lief was ³ _____ busy ⁴ _____ he did not find time to return to Vinland. ⁵ _____ brother Thorwald, ⁶ _____, decided to go. ⁷ _____ and ⁸ _____ men explored more land ⁹ _____ spent some winters on the new continent. ¹⁰ _____ Thorwald was attacked by a large number of fierce copper-coloured natives ¹¹ _____ travelled over the water in swift canoes. In the battle Thorwald was badly wounded under the arm by an arrow. ¹² _____ knew ¹³ _____ was going to die, ¹⁴ _____ he asked ¹⁵ _____ men to carry ¹⁶ _____ to a cape overlooking the sea ¹⁷ _____ he had hoped to build a settlement. ¹⁸ _____ did so, ¹⁹ _____ there the sturdy Viking breathed ²⁰ _____ last. Thorwald's men stayed on another winter. ²¹ _____ in the spring ²² _____ loaded ²³ _____ boats with wood ²⁴ _____ returned to Greenland.

During the next few years, ²⁵ _____ is believed, other Vikings came from Greenland ²⁶ _____ settled in America. Sometimes ²⁷ _____ quarrelled ²⁸ _____ fought among themselves; ²⁹ _____ more often the savage natives attacked ³⁰ _____. At last ³¹ _____ all returned to Greenland ³² _____ for five hundred years America was forgotten by the white men.

No one knows exactly ³³ _____ Vinland was, ³⁴ _____ much of ³⁵ _____ we know about ³⁶ _____ has come down to ³⁷ _____ only through the legends ³⁸ _____ stories of the Vikings ³⁹ _____ were told ⁴⁰ _____ sung around ⁴¹ _____ fires in the winter time. Vinland was probably somewhere along the coast of Nova Scotia ⁴² _____ the United States, ⁴³ _____ it may even have been in the Gulf of St. Lawrence.

10. _____

NAME: _____,
(last name) (first name)

¹ _____ have already read the story of ² _____
Canadians in different parts of ³ _____ country now live, ⁴ _____
how the eastern part of ⁵ _____ large nation was explored ⁶ _____
settled by people from Europe. Now ⁷ _____ shall see ⁸ _____
Western Canada became ⁹ _____ it is today.

¹⁰ _____ story will tell ¹¹ _____ about explorers
¹² _____ ventured far from ¹³ _____ homes in Eastern Canada to
search for the western boundary of ¹⁴ _____ country. ¹⁵ _____
shall learn ¹⁶ _____ the west coast of Canada was first reached
¹⁷ _____ by men ¹⁸ _____ crossed the continent ¹⁹ _____
by sailors ²⁰ _____ came by way of the Pacific Ocean.

The first white people to come to Western Canada were the fur traders.
²¹ _____ worked alone ²² _____ formed companies to gather the
wealth ²³ _____ was to be found in the lakes ²⁴ _____ streams.
²⁵ _____ the traders were often mean men. ²⁶ _____ destroyed one
fur region after another by killing too many of the fur-bearing animals. There
came a time ²⁷ _____ people had to turn to other work to make a living.

Two hundred years after the first settlement in Eastern Canada, the
rich farm land of the prairies brought the first group of settlers to the valley
of the Red River in Manitoba. The discovery of gold brought settlers to British
Columbia.

²⁸ _____, it was only about sixty years ago ²⁹ _____
people from many parts of the world began to come in large numbers. These were
the ancestors of many of the children ³⁰ _____ live in the West today.
³¹ _____ were the men ³² _____ women ³³ _____ helped to
change the vast wilderness into a thriving land of farms, villages, towns,
³⁴ _____ cities.

12. _____

NAME: _____,
(last name) (first name)

In 1670 the Hudson's Bay Company was founded in England. To
1 _____ was granted all the land 2 _____ rivers drained into
Hudson Bay. This land, of course, included most of 3 _____ is now known
as the Prairie Provinces. The Hudson's Bay Company still has trading posts in
northern 4 _____ western Canada.

The first white man to reach the prairies was Henry Kelsey,
5 _____ agreed to explore for the Hudson's Bay Company. 6 _____ is
not certain just 7 _____ he went, 8 _____ he must have reached
the grasslands, 9 _____ on 10 _____ return 11 _____
surprised 12 _____ friends by telling 13 _____ of great herds of
buffalo roaming over level plains. Later, in 1731, a French explorer, La Verendrye,
came from Montreal with 14 _____ followers. 15 _____ travelled
by canoe, making 16 _____ way by lakes 17 _____ streams to the
meeting place of the Red River 18 _____ the Assiniboine, 19 _____
the city of Winnipeg grew up many years later. There 20 _____ built a
fort, 21 _____ then continued on westward.




The first settlers were Scotsmen, 22 _____ came by way of
Hudson Bay 23 _____ the lakes 24 _____ rivers of the north. 25 _____
were sent out by Lord Selkirk in 1811, 26 _____ reached the Red River
the following year. 27 _____ all kinds of difficulties due to rival
traders, floods, 28 _____ grasshoppers, the settlers succeeded in gathering
a harvest. 29 _____, other settlers reached the prairies by way of La
Verendrye's water route from the east.

30 _____ was from the south 31 _____ the next settlers
arrived. 32 _____ came by way of the farmlands of the United States,
33 _____ travelled northward along the Red River Valley. 34 _____,
when the railway from eastern Canada was completed along the northern shore of
Lake Superior, hundreds of thousands of settlers were able to enter without
suffering the hardships of the first pioneers.

APPENDIX C

WORDS STUDIED IN THE
INFORMAL ANALYSIS OF
PUPILS' ERROR RESPONSES
TO ITEMS IN CLOZE TEST,
SERIES B

ERROR CATEGORIES

| | |
|---|-------------------|
|  | 1 to 10 per cent |
|  | 11 to 20 per cent |
|  | 21 to 31 per cent |

2. _____ NAME: _____,
(last name) (first name)

Bombay is not one of the ancient towns of India. About three hundred years ago, ¹ _____ was only a miserable fishing village held by Portuguese traders. ² _____ thought so little of ³ _____ that ⁴ **THEY** gave ⁵ _____ to a Portuguese princess ⁶ _____ a part of ⁷ _____ gift ⁸ _____ she married King Charles the Second of England. King Charles let English traders use the village. Now this fishing village has become one of the greatest cities in the world. ⁹ _____ is an important port ¹⁰ _____ a great center of industry ¹¹ _____ commerce.

There are taxis in Bombay, ¹² _____ perhaps ¹³ _____ would prefer to see the town in a more relaxed way. ¹⁴ _____ so, the thing to do is to get a horse cab called a 'victoria'. ¹⁵ _____, drive along beautiful Marine Drive ¹⁶ _____ see Bombay's great hotels ¹⁷ **AND** apartment houses. ¹⁸ _____ visit Bombay's most fashionable area, Malabar Hill. Here very wealthy people have built ¹⁹ _____ homes. From the highest point of the hill, ²⁰ _____ get a good view of this great city. In the distance is a forest of smoking factory chimneys. ²¹ _____ belong to some of the biggest fabric mills in the world, ²² _____ Bombay is the center of India's cotton industry.

Not all the streets of Bombay are beautiful ²³ _____ modern. There are crowded market streets ²⁴ _____ women with baskets of vegetables ²⁵ **AND** fruits carry on a thriving business on the side walks. The people must walk along the middle of the roads. In streets like this, the driver must drive very slowly ²⁶ **AND** keep ²⁷ _____ hand on the horn. ²⁸ _____ these are only the side streets. ²⁹ _____ you are in a hurry, ³⁰ **YOU** can turn into a main street ³¹ **AND** go more quickly.

4. _____

NAME: _____,

(last name)

(first name)

During the planting ¹ _____ the harvest seasons Mr. Das may work in the fields from dawn to dusk. ² IT is not pleasant to work in the heat ³ AND mud, ⁴ _____ Mr Das ⁵ _____ the other men of the village are used to ⁶ _____. Mr Das helped ⁷ HIS father in the fields ⁸ WHEN he was Shambhu's age, ⁹ _____ there was no school for ¹⁰ _____ to go to. Now Shambhu helps ¹¹ HIS father in the fields only at the busiest times.

Mr. Das never wears a shirt in the field, ¹² _____ seldom at other times. ¹³ HE has one piece of clothing ¹⁴ _____ he wraps around himself to make loose trousers. This is called a dhoti. ¹⁵ HE also has a piece of cloth, four feet in size, ¹⁶ _____ serves as towel, turban, ¹⁷ _____ mat ¹⁸ _____ the need arises. ¹⁹ _____ is ²⁰ _____ gamcha. ²¹ _____ he has time at noon, ²² _____ his lunch of rice with dal, fish, ²³ AND vegetables ²⁴ _____ Mrs Das brings to ²⁵ _____ in the field, ²⁶ _____ spreads ²⁷ _____ gamcha out in a patch of shade ²⁸ _____ has a nap. Some days ²⁹ HE must keep right on working. In winter ³⁰ HE wears a cape called a chadar.

Some days Mr Das does not have to go into the fields, ³¹ BUT he still gets up early. ³² HE cleans out the cowshed ³³ AND works in the vegetable garden. In the middle of the morning ³⁴ HE walks into the village. Sometimes ³⁵ HE attends the panchayat ³⁶ _____ village council ³⁷ _____ meets at a platform built around a big banyan tree.

6. _____

NAME: _____,
(last name) (first name)

After depending on coffee ¹ _____ hides as chief exports for more than 300 years, Central America had a great, new industry with the coming of this century - bananas. A ripe banana does not keep very long, ² _____ fortunately, ³ _____ can be picked ⁴ _____ it is hard ⁵ AND green. ⁶ _____ you keep the banana cool on the boat journey from Central America to this country, ⁷ _____ can get ⁸ _____ to market ⁹ _____ it is too ripe. ¹⁰ _____ the banana ship is really a kind of big refrigerator. ¹¹ _____ we had refrigerator ships, people from Boston ¹² AND other cities in the United States went to Costa Rica ¹³ AND started banana plantations.

The banana likes the hot ¹⁴ _____ moist climate ¹⁵ _____ heavy rains of the eastern coast of Central America. The few Indians ¹⁶ _____ lived in this part of Costa Rica, ¹⁷ _____, did not want to work on banana plantations. ¹⁸ THEY preferred to hunt ¹⁹ _____ fish ²⁰ AND have a little garden patch. ²¹ THEY preferred to sit in the shade ²² AND go without the white man's costly things. ²³ _____ did the people on the highlands of Costa Rica want to go down into the hot land ²⁴ AND work among the insects. ²⁵ THEY wanted to live ²⁶ WHERE it was cool. ²⁷ _____ the banana farmers went over to Jamaica ²⁸ AND hired Negroes to work ²⁹ _____ banana plantations. The negroes had been used to hot weather in Africa.

For many years, eastern Costa Rica grew ³⁰ _____ shipped four out of every ten bananas ³¹ _____ were eaten in the United States ³² AND Europe. ³³ _____ came a disease ³⁴ _____ killed most of the banana plants.

8. _____

NAME: _____,

(last name)

(first name)

¹ _____ Eric the Red died ² HIS son, Lief the Lucky, became the Chief of Greenland. Lief was ³ _____ busy ⁴ _____ he did not find time to return to Vinland. ⁵ HIS brother Thorwald, ⁶ _____, decided to go. ⁷ _____ and ⁸ _____ men explored more land ⁹ AND _____ spent some winters on the new continent. ¹⁰ _____ Thorwald was attacked by a large number of fierce copper-coloured natives ¹¹ _____ travelled over the water in swift canoes. In the battle Thorwald was badly wounded under the arm by an arrow. ¹² HE knew ¹³ HE was going to die, ¹⁴ _____ he asked ¹⁵ _____ men to carry ¹⁶ HIM to a cape overlooking the sea ¹⁷ _____ he had hoped to build a settlement. ¹⁸ _____ did so, ¹⁹ AND there the sturdy Viking breathed ²⁰ _____ last. Thorwald's men stayed on another winter. ²¹ _____ in the spring ²² THEY loaded ²³ _____ boats with wood ²⁴ AND returned to Greenland.

During the next few years, ²⁵ _____ is believed, other Vikings came from Greenland ²⁶ AND settled in America. Sometimes ²⁷ THEY quarrelled ²⁸ AND fought among themselves; ²⁹ _____ more often the savage natives attacked ³⁰ THEM. At last ³¹ THEY all returned to Greenland ³² AND for five hundred years America was forgotten by the white men.

No one knows exactly ³³ _____ Vinland was, ³⁴ _____ much of ³⁵ _____ we know about ³⁶ _____ has come down to ³⁷ _____ only through the legends ³⁸ _____ stories of the Vikings ³⁹ _____ were told ⁴⁰ _____ sung around ⁴¹ _____ fires in the winter time. Vinland was probably somewhere along the coast of Nova Scotia ⁴² _____ the United States, ⁴³ _____ it may even have been in the Gulf of St. Lawrence.

10. _____

NAME: _____,
(last name) (first name)

¹ _____ have already read the story of ² _____
Canadians in different parts of ³ _____ country now live, ⁴ _____
how the eastern part of ⁵ _____ large nation was explored ⁶ AND
settled by people from Europe. Now ⁷ WE shall see ⁸ HOW
Western Canada became ⁹ _____ it is today.

¹⁰ _____ story will tell ¹¹ _____ about explorers
¹² _____ ventured far from ¹³ THEIR homes in Eastern Canada to
search for the western boundary of ¹⁴ _____ country. ¹⁵ WE
shall learn ¹⁶ _____ the west coast of Canada was first reached
¹⁷ _____ by men ¹⁸ _____ crossed the continent ¹⁹ _____
by sailors ²⁰ _____ came by way of the Pacific Ocean.

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²¹ THEY worked alone ²² _____ formed companies to gather the
wealth ²³ _____ was to be found in the lakes ²⁴ AND streams.
²⁵ _____ the traders were often mean men. ²⁶ THEY destroyed one
fur region after another by killing too many of the fur-bearing animals. There
came a time ²⁷ WHEN people had to turn to other work to make a living.

Two hundred years after the first settlement in Eastern Canada, the
rich farm land of the prairies brought the first group of settlers to the valley
of the Red River in Manitoba. The discovery of gold brought settlers to British
Columbia.

²⁸ _____, it was only about sixty years ago ²⁹ _____
people from many parts of the world began to come in large numbers. These were
the ancestors of many of the children ³⁰ _____ live in the West today.
³¹ _____ were the men ³² AND women ³³ _____ helped to
change the vast wilderness into a thriving land of farms, villages, towns,
³⁴ AND cities.

12. _____

NAME: _____,
(last name) (first name)




In 1670 the Hudson's Bay Company was founded in England. To
1 _____ was granted all the land 2 _____ rivers drained into
Hudson Bay. This land, of course, included most of 3 _____ is now known
as the Prairie Provinces. The Hudson's Bay Company still has trading posts in
northern 4 _____ AND _____ western Canada.

The first white man to reach the prairies was Henry Kelsey,
5 _____ agreed to explore for the Hudson's Bay Company. 6 _____ is
not certain just 7 _____ he went, 8 _____ he must have reached
the grasslands, 9 _____ on 10 _____ return 11 _____
surprised 12 _____ HIS _____ friends by telling 13 _____ THEM _____ of great herds of
buffalo roaming over level plains. Later, in 1731, a French explorer, La Verendrye,
came from Montreal with 14 _____ followers. 15 _____ travelled
by canoe, making 16 _____ way by lakes 17 _____ AND _____ streams to the
meeting place of the Red River 18 _____ the Assiniboine, 19 _____
the city of Winnipeg grew up many years later. There 20 _____ built a
fort, 21 _____ AND _____ then continued on westward.

The first settlers were Scotsmen, 22 _____ came by way of
Hudson Bay 23 _____ the lakes 24 _____ AND _____ rivers of the north. 25 _____ THEY _____
were sent out by Lord Selkirk in 1811, 26 _____ reached the Red River
the following year. 27 _____ all kinds of difficulties due to rival
traders, floods, 28 _____ AND _____ grasshoppers, the settlers succeeded in gathering
a harvest. 29 _____, other settlers reached the prairies by way of La
Verendrye's water route from the east.

30 _____ was from the south 31 _____ the next settlers
arrived. 32 _____ THEY _____ came by way of the farmlands of the United States,
33 _____ travelled northward along the Red River Valley. 34 _____,
when the railway from eastern Canada was completed along the northern shore of
Lake Superior, hundreds of thousands of settlers were able to enter without
suffering the hardships of the first pioneers.

ERROR CATEGORIES

-  70 to 79 per cent
-  80 to 89 per cent
-  90 per cent or more

2. _____ NAME: _____,
(last name) (first name)

Bombay is not one of the ancient towns of India. About three hundred years ago, ¹ _____ was only a miserable fishing village held by Portuguese traders. ² _____ thought so little of ³ _____ that ⁴ _____ gave ⁵ _____ to a Portuguese princess ⁶ AS a part of ⁷ HER gift ⁸ _____ she married King Charles the Second of England. King Charles let English traders use the village. Now this fishing village has become one of the greatest cities in the world. ⁹ _____ is an important port ¹⁰ _____ a great center of industry ¹¹ _____ commerce.

There are taxis in Bombay, ¹² BUT ¹³ _____ perhaps ¹⁴ _____ so, the thing would prefer to see the town in a more relaxed way. ¹⁵ FIRST, drive along beautiful Marine Drive ¹⁶ _____ see Bombay's great hotels ¹⁷ _____ apartment houses. ¹⁸ THEN visit Bombay's most fashionable area, Malabar Hill. Here very wealthy people have built ¹⁹ _____ homes. From the highest point of the hill, ²⁰ _____ get a good view of this great city. In the distance is a forest of smoking factory chimneys. ²¹ _____ belong to some of the biggest fabric mills in the world, ²² FOR Bombay is the center of India's cotton industry.

Not all the streets of Bombay are beautiful ²³ OR modern. There are crowded market streets ²⁴ WHERE women with baskets of vegetables ²⁵ _____ fruits carry on a thriving business on the side walks. The people must walk along the middle of the roads. In streets like this, the driver must drive very slowly ²⁶ _____ keep ²⁷ _____ hand on the horn. ²⁸ _____ these are only the side streets. ²⁹ _____ you are in a hurry, ³⁰ _____ can turn into a main street ³¹ _____ go more quickly.

4. _____

NAME: _____,
(last name) (first name)

During the planting ¹ _____ the harvest seasons Mr. Das may work in the fields from dawn to dusk. ² _____ is not pleasant to work in the heat ³ _____ mud, ⁴ _____ Mr Das ⁵ _____ the other men of the village are used to ⁶ _____. Mr Das helped ⁷ _____ father in the fields ⁸ _____ he was Shambhu's age, ⁹ BECAUSE there was no school for ¹⁰ _____ to go to. Now Shambhu helps ¹¹ _____ father in the fields only at the busiest times.

Mr. Das never wears a shirt in the field, ¹² _____ seldom at other times. ¹³ _____ has one piece of clothing ¹⁴ WHICH he wraps around himself to make loose trousers. This is called a dhoti. ¹⁵ _____ also has a piece of cloth, four feet in size, ¹⁶ WHICH serves as towel, turban, ¹⁷ OR mat ¹⁸ AS the need arises. ¹⁹ IT is ²⁰ HIS gamcha. ²¹ IF he has time at noon, ²² AFTER his lunch of rice with dal, fish, ²³ _____ vegetables ²⁴ _____ Mrs Das brings to ²⁵ _____ in the field, ²⁶ _____ spreads ²⁷ HIS gamcha out in a patch of shade ²⁸ _____ has a nap. Some days ²⁹ _____ must keep right on working. In winter ³⁰ _____ wears a cape called a chadar.

Some days Mr Das does not have to go into the fields, ³¹ _____ he still gets up early. ³² _____ cleans out the cowshed ³³ _____ works in the vegetable garden. In the middle of the morning ³⁴ _____ walks into the village. Sometimes ³⁵ _____ attends the panchayat ³⁶ OR village council ³⁷ WHICH meets at a platform built around a big banyan tree.

6. _____

NAME: _____,
(last name) (first name)

After depending on coffee ¹ _____ hides as chief exports for more than 300 years, Central America had a great, new industry with the coming of this century - bananas. A ripe banana does not keep very long, ² _____ fortunately, ³ _____ can be picked ⁴ WHILE it is hard ⁵ _____ green. ⁶ _____ you keep the banana cool on the boat journey from Central America to this country, ⁷ _____ can get ⁸ _____ to market ⁹ _____ it is too ripe. ¹⁰ FOR THIS REASON the banana ship is really a kind of big refrigerator. ¹¹ AFTER we had refrigerator ships, people from Boston ¹² _____ other cities in the United States went to Costa Rica ¹³ _____ started banana plantations.

The banana likes the hot ¹⁴ _____ moist climate ¹⁵ _____ heavy rains of the eastern coast of Central America. The few Indians ¹⁶ WHO lived in this part of Costa Rica, ¹⁷ HOWEVER, did not want to work on banana plantations. ¹⁸ _____ preferred to hunt ¹⁹ _____ fish ²⁰ _____ have a little garden patch. ²¹ _____ preferred to sit in the shade ²² _____ go without the white man's costly things. ²³ NOR did the people on the highlands of Costa Rica want to go down into the hot land ²⁴ _____ work among the insects. ²⁵ _____ wanted to live ²⁶ _____ it was cool. ²⁷ SO the banana farmers went over to Jamaica ²⁸ _____ hired Negroes to work ²⁹ THEIR banana plantations. The negroes had been used to hot weather in Africa.

For many years, eastern Costa Rica grew ³⁰ _____ shipped four out of every ten bananas ³¹ _____ were eaten in the United States ³² _____ Europe. ³³ _____ came a disease ³⁴ WHICH killed most of the banana plants.

8. _____

NAME: _____,
(last name) (first name)

¹ _____ Eric the Red died ² _____ son, Lief the Lucky, became the Chief of Greenland. Lief was ³ SO busy ⁴ THAT he did not find time to return to Vinland. ⁵ _____ brother Thorwald, ⁶ HOWEVER, decided to go. ⁷ _____ and ⁸ _____ men explored more land ⁹ _____ spent some winters on the new continent. ¹⁰ BUT Thorwald was attacked by a large number of fierce copper-coloured natives ¹¹ WHO travelled over the water in swift canoes. In the battle Thorwald was badly wounded under the arm by an arrow. ¹² _____ knew ¹³ _____ was going to die, ¹⁴ _____ he asked ¹⁵ _____ men to carry ¹⁶ _____ to a cape overlooking the sea ¹⁷ _____ he had hoped to build a settlement. ¹⁸ _____ did so, ¹⁹ _____ there the sturdy Viking breathed ²⁰ _____ last. Thorwald's men stayed on another winter. ²¹ _____ in the spring ²² _____ loaded ²³ _____ boats with wood ²⁴ _____ returned to Greenland.

During the next few years, ²⁵ _____ is believed, other Vikings came from Greenland ²⁶ _____ settled in America. Sometimes ²⁷ _____ quarrelled ²⁸ _____ fought among themselves; ²⁹ _____ more often the savage natives attacked ³⁰ _____. At last ³¹ _____ all returned to Greenland ³² _____ for five hundred years America was forgotten by the white men.

No one knows exactly ³³ _____ Vinland was, ³⁴ FOR much of ³⁵ _____ we know about ³⁶ _____ has come down to ³⁷ _____ only through the legends ³⁸ OR stories of the Vikings ³⁹ _____ were told ⁴⁰ OR sung around ⁴¹ _____ fires in the winter time. Vinland was probably somewhere along the coast of Nova Scotia ⁴² _____ the United States, ⁴³ _____ it may even have been in the Gulf of St. Lawrence.

10. _____

NAME: _____,
(last name) (first name)

¹ _____ have already read the story of ² HOW Canadians in different parts of ³ _____ country now live, ⁴ _____ how the eastern part of ⁵ OUR large nation was explored ⁶ _____ settled by people from Europe. Now ⁷ _____ shall see ⁸ _____ Western Canada became ⁹ _____ it is today.

¹⁰ OUR story will tell ¹¹ US about explorers ¹² _____ ventured far from ¹³ _____ homes in Eastern Canada to search for the western boundary of ¹⁴ _____ country. ¹⁵ _____ shall learn ¹⁶ THAT the west coast of Canada was first reached ¹⁷ NOT by men ¹⁸ _____ crossed the continent ¹⁹ BUT by sailors ²⁰ _____ came by way of the Pacific Ocean.

The first white people to come to Western Canada were the fur traders. ²¹ _____ worked alone ²² OR formed companies to gather the wealth ²³ _____ was to be found in the lakes ²⁴ _____ streams. ²⁵ BUT the traders were often mean men. ²⁶ _____ destroyed one fur region after another by killing too many of the fur-bearing animals. There came a time ²⁷ _____ people had to turn to other work to make a living.

Two hundred years after the first settlement in Eastern Canada, the rich farm land of the prairies brought the first group of settlers to the valley of the Red River in Manitoba. The discovery of gold brought settlers to British Columbia.

²⁸ HOWEVER, it was only about sixty years ago ²⁹ _____ people from many parts of the world began to come in large numbers. These were the ancestors of many of the children ³⁰ _____ live in the West today. ³¹ _____ were the men ³² _____ women ³³ _____ helped to change the vast wilderness into a thriving land of farms, villages, towns, ³⁴ _____ cities.

12. _____

NAME: _____,
(last name) (first name)

In 1670 the Hudson's Bay Company was founded in England. To
1 _____ was granted all the land 2 WHOSE rivers drained into
Hudson Bay. This land, of course, included most of 3 _____ is now known
as the Prairie Provinces. The Hudson's Bay Company still has trading posts in
northern 4 _____ western Canada.

The first white man to reach the prairies was Henry Kelsey,
5 WHO agreed to explore for the Hudson's Bay Company. 6 _____ is
not certain just 7 _____ he went, 8 _____ he must have reached
the grasslands, 9 BECAUSE on 10 _____ return 11 _____
surprised 12 _____ friends by telling 13 _____ of great herds of
buffalo roaming over level plains. Later, in 1731, a French explorer, La Verendrye,
came from Montreal with 14 _____ followers. 15 _____ travelled
by canoe, making 16 _____ way by lakes 17 _____ streams to the
meeting place of the Red River 18 _____ the Assiniboine, 19 WHERE
the city of Winnipeg grew up many years later. There 20 HE built a
fort, 21 _____ then continued on westward.

The first settlers were Scotsmen, 22 WHO came by way of
Hudson Bay 23 _____ the lakes 24 _____ rivers of the north. 25 _____
were sent out by Lord Selkirk in 1811, 26 _____ reached the Red River
the following year. 27 AFTER all kinds of difficulties due to rival
traders, floods, 28 _____ grasshoppers, the settlers succeeded in gathering
a harvest. 29 LATER, other settlers reached the prairies by way of La
Verendrye's water route from the east.

30 _____ was from the south 31 THAT the next settlers
arrived. 32 _____ came by way of the farmlands of the United States,
33 _____ travelled northward along the Red River Valley. 34 FINALLY,
when the railway from eastern Canada was completed along the northern shore of
Lake Superior, hundreds of thousands of settlers were able to enter without
suffering the hardships of the first pioneers.

APPENDIX D

COMPARISONS OF INCREASE IN
SCORES ON STEP WITH INCREASE
IN SCORES ON CLOZE TEST, SERIES A
AND ON CLOZE TEST, SERIES B

COMPARISON OF INCREASE IN SCORES ON STEP
WITH INCREASE IN SCORES ON
CLOZE TEST, SERIES A
GROUP X - N = 121

| Grade Level Of Pupil | Mean Score On <u>STEP</u> | MEAN SCORES ON CLOZE TEST, SERIES A | |
|-------------------------|------------------------------|-------------------------------------|------------------------------|
| | | Grade Level Of Reading Passage | Mean Proportionate Scores |
| 4 | 45.19 | 4 | .31 |
| | | 5 | .39 |
| | | 6 | .43 |
| 5 | 51.02 | 4 | .36 |
| | | 5 | .45 |
| | | 6 | .48 |
| 6 | 58.28 | 4 | .33 |
| | | 5 | .41 |
| | | 6 | .43 |

COMPARISON OF INCREASE IN SCORES
ON STEP WITH INCREASE IN SCORES
ON CLOZE TEST, SERIES B
GROUP Y N = 127

| Grade Level of Pupil | Mean Score On <u>STEP</u> | Mean Scores on Cloze Test, Series B | |
|-------------------------|------------------------------|-------------------------------------|------------------------------|
| | | Grade Level of Reading Passage | Mean Proportionate Scores |
| 4 | 45.83 | 4 | .36 |
| | | 5 | .43 |
| | | 6 | .47 |
| 5 | 51.19 | 4 | .37 |
| | | 5 | .44 |
| | | 6 | .51 |
| 6 | 57.50 | 4 | .28 |
| | | 5 | .35 |
| | | 6 | .39 |

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